S. HRG. 100-216

COPYRIGHT ISSUES PRESENTED BY DIGITAL AUDIO TAPE

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON
PATENTS, COPYRIGHTS AND TRADEMARKS

OF THE

SENATE COMMITTEE ON THE JUDICIARY

AND THE

SUBCOMMITTEE ON COURTS, CIVIL LIBERTIES,
AND THE ADMINISTRATION OF JUSTICE

OF THE

HOUSE COMMITTEE ON THE JUDICIARY

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

DIGITAL AUDIO TAPING

APRIL 2, 1987

Serial No. J-100-13
(Senate Committee on the Judiciary)

Serial No. 6
(House Committee on the Judiciary)

Printed for the use of the Committees on the Judiciary

U.S. GOVERNMENT PRINTING OFFICE
74-807 WASHINGTON : 1987

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

H521-82
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COPYRIGHT ISSUES PRESENTED BY DIGITAL AUDIO TAPE

THURSDAY, APRIL 2, 1987

U.S. SENATE, COMMITTEE ON THE JUDICIARY, SUBCOMMITTEE ON PATENTS, COPYRIGHTS AND TRADEMARKS, JOINT WITH SUBCOMMITTEE ON COURTS, CIVIL LIBERTIES, AND THE ADMINISTRATION OF JUSTICE OF THE HOUSE COMMITTEE ON THE JUDICIARY,

Washington, DC.

The Subcommittee on Patents, Copyrights and Trademarks of the Senate Committee on the Judiciary and the Subcommittee on Courts, Civil Liberties, and the Administration of Justice of the House Judiciary Committee met, pursuant to notice, at 10:08 a.m., in room 106, Dirksen Senate Office Building, Senator Dennis DeConcini (chairman of the Subcommittee on Patents, Copyrights and Trademarks) presiding.

OPENING STATEMENT OF HON. DENNIS DeCONCINI, A U.S. SENATOR FROM THE STATE OF ARIZONA

Senator **DeConcini**. Ladies and gentlemen, the Subcommittee on Patents, Copyrights and Trademarks of the Senate will come to order.

I'm very pleased to be joined by my friend, Representative Bob Kastenmeier, the distinguished chairman of the Subcommittee on Courts, Civil Liberties, and the Administration of Justice of the House Committee on the Judiciary.

We are having a joint hearing today. I'm going to ask the distinguished chairman to be the first to bring this to order and make his opening statement.

OPENING STATEMENT OF HON. ROBERT W. KASTENMEIER, A U.S. REPRESENTATIVE FROM THE STATE OF WISCONSIN

Mr. **Kastenmeier**. Thank you very much, Senator DeConcini.

I'm very pleased to join you—you are the chairman here—and Senator Leahy this morning. There will be other House members joining us as the hearing progresses.

I am very pleased that the House Judiciary subcommittee is holding this joint hearing today with your committee, the Senate Judiciary Subcommittee on Patents, Copyrights and Trademarks. This joint hearing underscores the cooperation we can look forward to between these two subcommittees during the 100th Congress. We have many, many important intellectual property issues facing us, and we will, no doubt, continue to work together to identify and then resolve these issues.

Today's hearing on digital audio taping is a logical continuation of the two hearings that my subcommittee held recently on the subject of intellectual property and trade. Those hearings touched on the interrelationship between this country's trade policy and a variety of intellectual property issues. In this context there have been a number of proposals during this Congress that require manufacturers of digital audio tape recorders to implant a blocking device, called a copy-code scanner, into those recorders. The effect of the device will be to prevent individuals in their homes from making high-quality tape recordings on digital audio tapes.

These proposals, supported by this country's recording industry, are contested by manufacturers of the equipment and consumer groups. The recording industry seeks to protect its rights to copyrighted material; the opponents are obviously interested in making this new technology available to the public.

The Constitution strikes a balance between the rights of the copyright holders and the interests of the public in free access to creative expression. Technological solutions such as this raise a number of critical issues relating to the enforcement of our intellectual property laws. For example, the Congress must explore how the copy-code scanner requirement affects access by potential consumers of this new technology. It also must investigate whether our copyright laws do or should prohibit home audio taping, and whether digital audio taping affects the legitimate interest of the copyright holders and thereby lessens their motivation to create new works.

There are a host of other issues that I am sure will be raised today by the witnesses at the hearing. So, Mr. Chairman, I look forward to being with you and to hearing the testimony.

Senator DeConcini. Representative Kastenmeier, thank you very much.

I think we have a very knowledgeable list of witnesses to be before us today. I think we are going to have some very interesting demonstrations and the testimony is going to be extremely helpful.

I am really pleased, Representative Kastenmeier, that we can hold joint hearings. We've been around this subject matter for the 10 years that I have been here and you have a legacy that goes far beyond that. I'm sure that I will learn a lot by having you join us here with your questioning and with the expert staff that you have assembled on your subcommittee.

I also will welcome in advance Representative Moorhead who I believe is planning to join us. I have worked with Congressman Moorhead, an outstanding leader in this area.

My statement this morning is going to be short, I think, because we're anxious to listen to the witnesses.

In the past I have never been persuaded by the dire predictions of the recording industry that home recording would mean the end of the industry. I voted against previous efforts to establish a fee on recording software and/or hardware because I didn't think it was justified under their copyright or economic theories. Although I acknowledge that home taping is occurring, I'm not sure to what extent it costs the recording industry money. It seems to me that interest in music expressed by home taping has been good for the recording business. Anecdotal evidence and other evidence presented to the subcommittee by the opponents of royalty legislation seem to show that the recording industry is healthy despite home taping.

The recording industry asserts that digital audio tape presents an even graver threat to their continued existence. We have their spokesmen here today to explain what effect they think DAT will have on their industry.

I have an open mind on this subject matter because it is to me new ground and new technology, and I welcome hearing the recording industry's views.

The electronics industry argues that DAT does not raise any new or different home taping issues than what we have visited before. The industry and its allies argue that home taping does not cause any sales displacement and that it may even be beneficial to the recording industry.

I am hopeful that the testimony this morning will help us zero in and come closer to what the facts are, No. 1, and what we lay people can understand and appreciate of these two very important industries as they relate to copyright matters.

We're going to try something new today. We have spokesmen for two sides of the issues sitting together at the table. We know that they know each other from many years of professional experience, and we know that there will be the proper demeanor as always is the case. [Laughter.]

I notice that they shook hands before, and I am sure they will after.

We are very, very pleased that you could join us, Mr. Jay Berman, Recording Industry Association of America; Mr. Dave Stebbings, CBS Record Technology; Mr. Charles Ferris of the Washington law firm with his name; Mr. Leonard Feldman, Feldman Electronic Laboratories.

Before I turn to the panel, I would yield to my distinguished colleague and the chairman of the Subcommittee on Technology in the Judiciary Committee and also the chairman of the Agriculture Committee in the Senate for any statement that he may have.

Senator LEAHY. Thank you, Mr. Chairman.

I won't make a statement except to note that you mentioned that Messrs. Berman and Ferris shook hands. If you watch next Monday night, Marvelous Marvin Haggler and Sugar Ray Leonard will shake hands, too, before they start off. [Laughter.]

I applaud you and Bob Kastenmeier for having these hearings. I think it is not only good to do it, but we are a lot better off to be able to do this in a joint hearing.

Senator DECONCINI. Thank you, Senator Leahy.

Before we begin with our first witness, Mr. Berman, we do have statements from Senator Hatch and Congressman Moorhead to place in the record at this time.

[The prepared statements of Senator Hatch and Congressman Moorhead follow:]

PREPARED STATEMENT OF HON. ORRIN G. HATCH

It is a pleasure to join with our House colleagues to discuss an issue with the potential to reshape the entire foundation of the American intellectual property protection system. With the introduction of Digital Audio Tape Devices into the American market, the general consumer will have the opportunity to make copies indistinguishable from originals produced in a professional recording studio. The consumer would no longer be required to purchase an original CD or records to enjoy state-of-the-art recordings.

In light of this threat to protections for creative activity, I have supported in the past a royalty on recording equipment. In the last three Congresses, however, we have been unable to reach a consensus on this legislation. This still seems to be an approach preferable to banning or altering technology by legislation. To my knowledge, it would be unprecedented for Congress to mandate by legislation technological restrictions or changes in new products.

With these initial observations and reservations, I intend to seek through this hearing to determine the extent of harm likely to occur by virtue of DAT and the best permanent means to protect America's creators and artists.

PREPARED STATEMENT OF HON. CARLOS J. MOORHEAD, A U.S. REPRESENTATIVE FROM THE STATE OF CALIFORNIA

Thank you Mr. Chairman. I would like to thank you Mr. Chairman, as well as the Chairman of my own subcommittee, Bob Kastenmeier, for convening this hearing. The issue before us today is an important one.

Very soon the new Japanese-made digital audio (DAT) machines will be imported to this country. This foreign manufactured machine copies only and thus the potential for allowing the wholesale deprivation of the intellectual property rights of creators and copyright holders in the music field. The issue is fundamentally a copyright issue, but it does have significant trade and commerce overtones which is why the House Energy and Commerce Committee has seen fit to recommend that DAT language be included in whatever trade package goes to the floor. Likewise the administration, after studying the issue has included in its "Competitiveness Initiative" a provision mandating a technological solution to the DAT problem.

During the debate on DAT in the Energy and Commerce Committee, one of the arguments of opponents of the DAT provisions was that Congress has yet to hold any hearings on the issue. Such is no longer the case and with that in mind I look forward to the testimony of our distinguished witnesses. Thank you.

STATEMENT OF JASON S. BERMAN, PRESIDENT, RECORDING INDUSTRY ASSOCIATION OF AMERICA, WASHINGTON, DC

Mr. BERMAN. Thank you, Mr. Chairman.

Let me start by saying that no one applauds the opportunity to be here before both subcommittees more than I do.

My name is Jason S. Berman. I am president of the Recording Industry Association of America.

Senator DECONCINI. Mr. Berman, let me first give the standard indication that the Chair will admit all statements in their total text into the record as if read here, without any objections.

Mr. BERMAN. Thank you.

Senator DECONCINI. We would ask that each member of the panel summarize their statements for us. Thank you.

Mr. BERMAN. I'm prepared to do that. Thank you.

I'm pleased to have the opportunity to address the members of both of these distinguished subcommittees on the subject of digital audio tapes, DAT. DAT poses the most significant technological threat the American music industry has ever faced. At the same time it offers a significant opportunity for Congress to craft a timely and uniquely suitable legislative response as we enter what appears to be the next phase of the home taping problem, a problem that has worsened over the years.

Last year, for example, blank tape sales in the United States increased by 21 percent to over 290 million units while record sales declined. Why? Let me quote from an article in the December 20 BillBoard magazine concerning the multiset Bruce Springsteen album. A buyer from a 42-store chain was quoted as saying that the sale of an LP or CD Springsteen set leads, and I quote, "to an almost automatic sale for a multipack of blank audio cassettes." It doesn't take much imagination to figure out what that tape is being used for, but, if it does, let your imagination run wild. It is to copy the Springsteen album.

Equipment and blank tape manufacturers continue to encourage home taping, urging consumers, and I quote, "Beat the system. Save money by copying your friend's cassette or buy a dual recorder because it quickly pays for itself by turning inexpensive blanks into prerecorded music cassettes."

But as bad as the situation is, it is about to get a lot worse. Digital audio tape is the tape version of compact disc technology. It is about to be introduced in this country. Why do music industries throughout the world regard that as such a threat? Because with DAT recorders home tapers can make perfect clones of prerecorded music, because DAT eliminates any distinction between original and copies, so that every copy becomes a new original, the equivalent of a master sound recording to be copied again and again and again with the same fidelity, and because DAT is only a copying machine, serving no purpose currently other than home taping.

At present record companies cannot even offer their prerecorded music for sale on DAT cassettes because there is no commercially feasible, high-speed duplication process available. In fact, we're told that the SONY system is 1½ to 2 years away from commercialization.

For the foreseeable future, then, with but one or two rare exceptions, only blank DAT cassettes will be sold. Thus, the current generation of DAT machines offers the music industry no new outlet for its prerecorded music, but only another tool for the taper, the perfect tool.

In short, DAT technology has the potential to cause the home taping problem to escalate completely out of control. Fortunately, the same wizardry that has created the machines capable of producing perfect copies of our music can likewise be used to protect it. I'm referring to a new technology called copy-coding that allows creators and copyright owners to control unauthorized tapings of their recordings.

My colleague, David Stebbings, will explain how the copy-code system works and will demonstrate it for you. I would like to focus on why we regard copy-coding such a promising solution to DAT.

For years we have been searching for the most appropriate answer to the audio home taping problem. Your subcommittees have considered various proposals for a compulsory licensing system under which royalties would be paid on audio blank tape and equipment. In fact, last year the Senate subcommittee passed a version of such a bill.

But our opponents, the very same manufacturers of DAT, have argued that royalties are too broad in scope and impractical to administer. So we are asked, isn't there some more focused technological solution? The answer is yes, it's copy-coding. It is a technological solution to a technological problem. It is precisely targeted. Only those who attempt to tape encoded, copyrighted musical recordings would be prevented from doing so. Those who tape piano lessons, class lecture notes, or unprotected recordings as well as all existing records, tapes, and CD's would be unaffected. Copy-coding is a marketplace solution to home taping. Once Congress has enacted legislation requiring manufacturers and importers to include the copy-code scanner in DAT machines, virtually no further governmental involvement would be necessary.

The Reagan administration, after careful analysis, has strongly endorsed the copy-code system as the appropriate long-term solution to the audio home taping problem.

As all of you know too well, copyright law usually lags behind technology, putting Congress in the politically difficult position of trying to stop someone from a particular practice or requiring them to pay for it. Historically, in such instances legal right has often given way to political might. That is precisely why the introduction of a wholly new technology such as DAT offers Congress a unique opportunity to anticipate, rather than respond, to technology.

DAT has the potential to become the predominant recording technology for generations to come. That means that by acting now Congress can influence the next several decades of recording equipment in a constructive way.

We recognize, of course, that this very limited legislative solution will not solve the entire home taping problem, but it will at least help curb the problem in the future. Congress should take advantage of this unique opportunity.

Moreover, if we were to act now, we could exert a positive influence on the legislative treatment of digital recording technology throughout the world. The EEC, for example, is currently considering the use of the CBS copy-code system to respond to this new generation of digital machines.

I used to think that all you needed to succeed in international trade was a really good product, and we have such a product. It's called American-recorded music, and it's the most sought-after music in the world. But the international competitiveness of this American asset is being diminished not because creative communities in other countries are producing better music, but because their engineers are producing taping machines that enable others to obtain our music without paying for it.

That is why the administration included a DAT provision in its competitiveness initiative—to preserve the competitive vitality of the American music industry.

Remember that DAT is not a question of free market competition. These machines do not write better songs; they simply copy our songs. They present no new opportunity for America's music community to sell its recordings; they only offer the capability to copy the music we helped to sell. That is not competition; that is unfair competition.

DAT machines are scheduled for arrival in the United States as early as this summer or fall. Before that time, before a single DAT machine has been sold, Congress should enact legislation to require hardware manufacturers to include the copy-code scanner in such machines.

Since it is a threat to intellectual property posed by the new DAT technology that gives rise to our fears, it is ultimately intellectual property law that should govern the response. The legislation we seek today, therefore, does not attempt to devise a definitive solution to either DAT or home taping. Rather, it is intended to provide a breathing period during which the status quo would be maintained. During that period the home taping problem as it currently exists will get no better, but insofar as DAT is concerned home taping will not get any worse.

That breathing period will give the Congress the time it needs to consider the fundamental issue in a more deliberative fashion. For now, we are asking only for interim relief, a short-term remedy designed to avoid a situation where the machines are here and the tapers are fast at work. If that were to happen, the law would never have an opportunity to harmonize the interests of the copyright owner with the advance of technology.

But prompt action is critical. Any further delay in responding to the imminent introduction of DAT machines would only play into the hands of the electronics industry. That is why we urge Congress to act now on an interim solution requiring copy-code scanners in DAT machines.

Thank you, Mr. Chairman.

[The following material was submitted for the record:]

STATEMENT

OF

JASON S. BERMAN

PRESIDENT

RECORDING INDUSTRY ASSOCIATION OF AMERICA

Summary

The Recording Industry Association of America believes that there should be a prompt, interim Congressional response to the imminent introduction of digital audio tape ("DAT") technology. DAT, which is the tape version of the compact disc ("CD"), poses the most significant technological threat that the American music industry has ever faced. DAT is a threat because it eliminates the distinction between originals and copies. With DAT, every copy becomes a new original, the equivalent of the master recording, to be copied again, and again, and again. Furthermore, because there doesn't yet exist a technology for the high-speed duplication of prerecorded DAT cassettes, we cannot sell our music in the new DAT format; DAT is only a copying machine, serving no purpose other than home taping. In essence, DAT has the potential to escalate the home taping problem, which has already reached massive proportions, completely out of control. DAT will also exacerbate the problem of commercial piracy throughout the world as piracy operations will be able to produce cassettes that sound as good as the genuine product.

A new engineering device called "copy-coding" offers an inviting opportunity to craft a timely and uniquely suitable legislative response to the home taping problem. The copy-coding system is precisely targeted at only those who would tape copyrighted recordings and thereby deprive creators and owners of their intellectual property rights. It requires no compulsory licenses, no royalty tribunals, no government bureaucracies. It is a technological solution to a technological problem.

The Reagan Administration, after careful study, has strongly endorsed the copy-code system and now the EEC is considering the use of the copy-code system to respond to the new generation of digital machines. We are thus presented with an invaluable opportunity to forge a worldwide consensus on a truly international problem.

The advent of DAT recorders can adversely impact the U.S. balance of trade. The competitiveness of the American music industry is being damaged, not because creators in other countries are writing better songs, but because their engineers are producing taping machines that enable our customers to obtain our music without paying us for it. Just as most of the premium blank tape and recording machines now used for the home taping of music originate in Japan, so will DAT tape and machines come from Japan. It will therefore be these foreign hardware manufacturers who will increase their profits at the expense of the American music industry.

The DAT machines will be arriving in the U.S. market as early as this summer or fall. Before a single machine has been sold, the Congress should enact legislation to require hardware manufacturers to install copy-code scanners in DAT machines. Since it is the threat to intellectual property posed by the new DAT technology that gives rise to our fears, it is ultimately intellectual property law that should govern the response. The legislation that we seek therefore is intended to provide only a breathing period during which the status quo will be maintained.

DAT has the potential to be the predominant recording technology for generations to come. The Congress now has the rare opportunity to anticipate, rather than respond to, technology. That is why we urge Congress to act immediately on interim legislation to require copy-code scanners in DAT machines.

* * *

My name is Jason S. Berman, and I am President of the Recording Industry Association of America. Our member companies produce and market about 90% of the prerecorded music sold in the United States.

I am pleased to have the opportunity to address the Members of both of your distinguished Subcommittees on the subject of digital audio tape, to solicit your support for a targeted, interim legislative response to the imminent introduction of DAT to the U.S. marketplace.

DAT poses the most significant technological threat that the American music industry has ever faced. At the same time, it offers a significant opportunity -- to craft a timely and uniquely suitable legislative response to the home taping problem. Before I elaborate on these points, however, let me first provide you with a little bit of background on the home taping problem generally, so that you can better understand the context in which the DAT issue arises.

The Home Taping Problem

For many years now, millions of people across the country have been taping, rather than buying, prerecorded music. At last count, in 1983, Americans were taping the equivalent of about $3.8 billion worth of music a year,[1] displacing sales revenues of some $1.5 billion annually.[2] That means that more than a third of the record industry's revenues were already being lost to home taping, and with DAT it is only going to get worse.[3] People continue to buy massive quantities of blank tape: According to statistics compiled by the Electronic Industries Association, between 1985 and 1986 blank tape sales increased by 21%.[4] Record sales, on the other hand, have declined.[5] In other words, the public is consuming more music than ever; they're just buying less of it.

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[1] Audits & Surveys, Home Taping in America: 1983, reprinted in Video and Audio Home Taping: Hearings Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary, 98th Cong., 1st Sess. at 193-224 (1983).

[2] See Statement of Alan Greenspan Re S. 1739, Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary, 99th Cong., 1st Sess. (October 1985).

The equipment and blank tape manufacturers have not hesitated to exploit the capability of their products to copy prerecorded music. Manufacturers and importers of blank tapes advertise that theirs is "the most musical cassette tape," that their tapes are specially formulated for "digital audio music recording," and that their tapes are "for people who want to do some serious taping." One manufacturer urges customers to "take the brilliant sound quality" of compact discs to the beach by taping them onto 90-minute cassettes; another urges tapers to double their "music money rebate" by purchasing extra blank tapes.

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[3] Dr. Alan Greenspan has shown that, each year, home taping has accounted for an increasing percentage of the total hours of recorded music available from both purchase and taping. See Statement of Alan Greenspan Re S. 1739, Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary, 99th Cong., 1st Sess. at 4-5 (October 1985). Other studies also confirm that home taping of music is growing. See CBS Records, Blank Tape Buyers: Their Attitudes and Impact on Prerecorded Music Sales at 10 (Fall 1980); WCI, A Consumer Survey: Home Taping at 4-6 (March 1982); both are reprinted in Copyright Infringements (Audio and Video Recorders): Hearings Before the Senate Comm. on the Judiciary, 97th Cong., 1st & 2nd Sess. 848-64 (1981 and 1982).

[4] In 1985, audio blank tape shipments amounted to 245,682,000 units. In 1985, they climbed to 296,681,000 units.

[5] From 1984-1985, total unit sales of recordings fell by 4%. Figures for 1986 will not be available until later this month, but similar results are expected for the period 1985-1986.

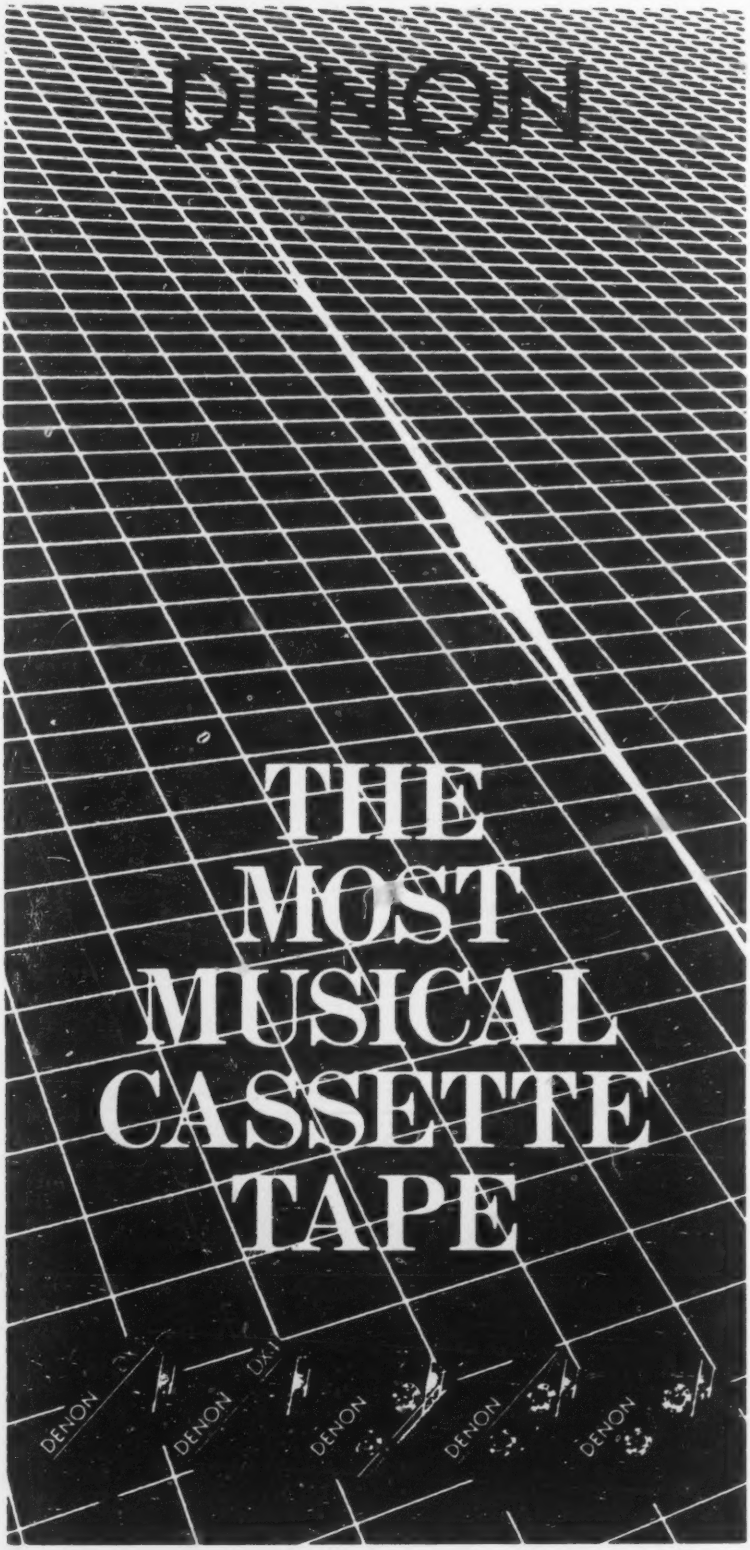
Advertisements for taping equipment encourage home taping even more blatantly, especially for the dual-well machines that facilitate the dubbing of prerecorded cassettes. They exhort consumers to "beat the system" and "save money" by copying "a friend's cassette." One advertiser bluntly suggests, "You have friends. Your friends have friends. Why not pool your resources and dramatically increase your cassette collection with the latest in high speed high quality tape duplicators." Still others advise that their dual cassette recorder "quickly pays for itself by turning inexpensive blanks into prerecorded music cassettes. It's like getting the high quality AM/FM stereo for free." (See the ads on the following pages.)

But while the largely foreign manufacturers of blank tape and recording equipment have grown rich off our music, the American music industry, and all who love music, have paid the price. You see, TDK and Maxell do not reinvest their blank tape profits into the creation of more music. It is record companies and music publishers who underwrite the creation of recorded music, and as home taping steadily diminishes the revenues they earn from the records they sell, there has been less money to invest in new artists, new songwriters, new music. In just the last eight years, the amount of new music being released into the market has declined by more than 40%!

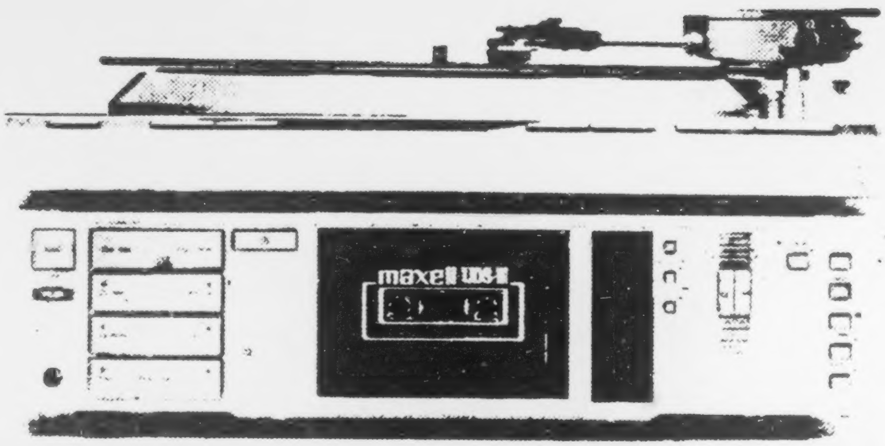
But as bad as the situation is, it is about to get a lot worse -- unless Congress acts promptly.

The Threat of DAT Technology

There is about to be introduced into this country a brand new technology that will pose a distinct threat to the intellectual property rights of the creative community. This technology, called digital audio tape



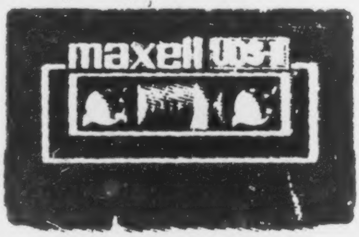
DENON
THE MOST MUSICAL CASSETTE TAPE
DENON
DENON
DX1
DENON
DENON
DENON



INTRODUCING MAXELL UDS.
FOR PEOPLE WHO WANT TO DO
SOME SERIOUS TAPING.

Finally, you can afford to put your entire record collection on cassettes you'll actually want to listen to.

Maxell's new UDS.



IF YOU
COULD HEAR
THIS TAPE,
90
FOR CD & DIGITAL AUDIO MUSIC RECORDING
MEMOREX® CDX II

Double your MEMOREX®

AUDIO CASSETTES

MUSIC MONEY Rebate!

"Is it live...or is it Memorex?"

HB II C-90

$1.61* Per Tape
When bought in 2 pack

MRX I C-90

$1.72* Per Tape
When bought in 2 pack

dB Series C-90

.72* Per Tape
When bought in 2 pack

HB II C-90

$1.61* Per Tape
When bought in 3 pack

MRX I C-90

$1.72* Per Tape
When bought in 3 pack

* AFTER DOUBLE REBATE OFFER

Save up to $1.50 per bag on MEMOREX 90-minute audio cassettes in 2-packs or 3-packs.

BONUS REBATE COUPON

This bonus rebate coupon doubles the value of the MEMOREX Music Money Rebate when attached to the official rebate form found at this retail outlet.

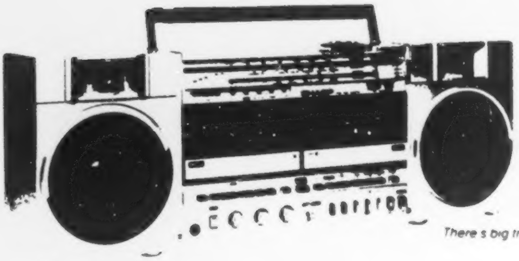
Rebate	2-Pack	3-Pack
In-Store	$ .50	$ .75
Bonus	.50	.75
Total	$1.00	$1.50

☐ Please Double My Music Money Rebate.

Signature ______________________
(form must be signed)

BONUS REBATE COUPON

OFFER IN EFFECT FROM
SEPTEMBER 24th thru OCTOBER 9th



Tape Factory

There's big trouble in the music industry

One look at the Sharp Tape Factory and you can understand why there's trouble in the music industry. Records aren't selling because people are copying their favorite songs from stereo FM radio stations onto inexpensive cassettes and playing them on everything from their Sony Walkman to their home cassette players. The Sharp Tape Factory certainly won't help the recording industry.

Equipped with AM-FM and two shortwave bands, the Sharp has two high-quality cassette stereo recording tape decks. The unit can record off any of its radio frequencies or an external turntable or duplicate an existing tape and do it at double speed. A special high-quality audio dubbing circuit lets you speed up both cassette decks to duplicate tapes at one-half the time it normally takes. And with tape deck to tape deck balanced circuitry, your reproduction quality is awfully close to the quality you'd expect from a professional studio.

If one of your friends has a tape you want to own, copy it. Or keep duplicate tapes — one tape in your car and one at home. Start a tape copying service. Use the unit in your business to duplicate copies of important messages.

The Sharp Tape Factory makes sense if you're looking for a little more than entertainment from your home stereo cassette system.

The two speakers don't separate from the main unit. However, each speaker actually contains two separate speakers and they produce excellent sound for their small size. The entire unit measures 5 x 8 x 22½, weighs 12 pounds, and comes complete with AC power cord. There are provisions for 8 D-cell batteries (not supplied) and it has volume, balance and tone controls. A great music machine.

Tape Factory (5051CA09 8.00) **$269.95**

> “One look at the Sharp Tape Factory and you can understand why there's trouble in the music industry. Records aren't selling because people are copying their favorite songs from stereo FM radio stations onto inexpensive cassettes and playing them on everything from their Sony Walkman to their home cassette players. The Sharp Tape Factory certainly won't help the recording industry.”

> “If one of your friends has a tape you want to own, copy it. Or keep duplicate tapes — one tape in your car and one at home. Start a tape copying service. Use the unit in your business to duplicate copies of important messages.”

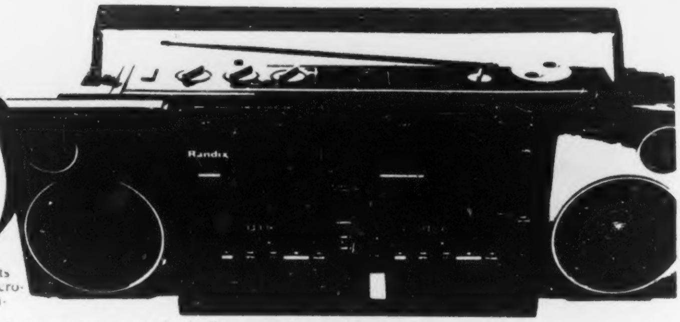
Beat the system. Copy your own cassettes.

Randix's two directly linked tape decks give you superb direct stereo tape copying capability in one unit. Duplicate a favorite tape for a friend or copy a borrowed cassette.

[illegible] built-in self-adjusting microphones record [illegible] stereo. [illegible] sound with dramatic stereo separation. And the unique Continued Play feature automatically begins second tape when first one plays out. Plus you get a sensitive AM/FM tuner with AFC signal-locking for drift-free radio reception. With slide Volume, Bass/Treble and Balance controls, and inputs for extra speakers, turntable, or tape recorder. [illegible] phone jacks. Uses [illegible] batteries ([illegible] incl[illegible] with AC cord. d[illegible] warranty. [illegible] FCC approved. [illegible]easures 14 × 7 × 6". Weighs 15 lbs.

The Randix portable studio recorder quickly pays for itself by turning inexpensive blanks into prerecorded music cassettes. It's like getting the high quality AM/FM stereo for free.

Randix Studio #LRX200 $199 (4.50).



Su[illegible]ed dubbing de[illegible]

Randix's new portable *high-speed* dubbing deck lets you make impeccable stereo cassette copies in *half* the normal time. Or tape your favorite radio programs directly from the sensitive built-in AM/FM tuner. Capture live [illegible] ngle [illegible] channel has its own built-in condenser microphone. It's a complete ministudio for less than $150.

Each smooth front-loading tape transport is individually controlled, or can be set for continuous playback from Tape A to Tape B for up to 2 hours of uninterrupted music. Two 4" acoustic suspension speakers produce big, rich sound with dramatic stereo separation. Or use the stereo headphone jack for private listening. Rotary tuning, volume, tone and balance controls are conveniently placed for quick accessibility. 3-digit tape counter makes song location easy.

Pop-up carrying handle lets you take this compact (7H × 21W × 5D") [illegible] ABS weighs [illegible] lbs. UL approved. 90 day warranty. [illegible] inexpensive blank tapes into beautiful music — in half the time. Randix Dual Cassette #JRX610 $149(6.50)

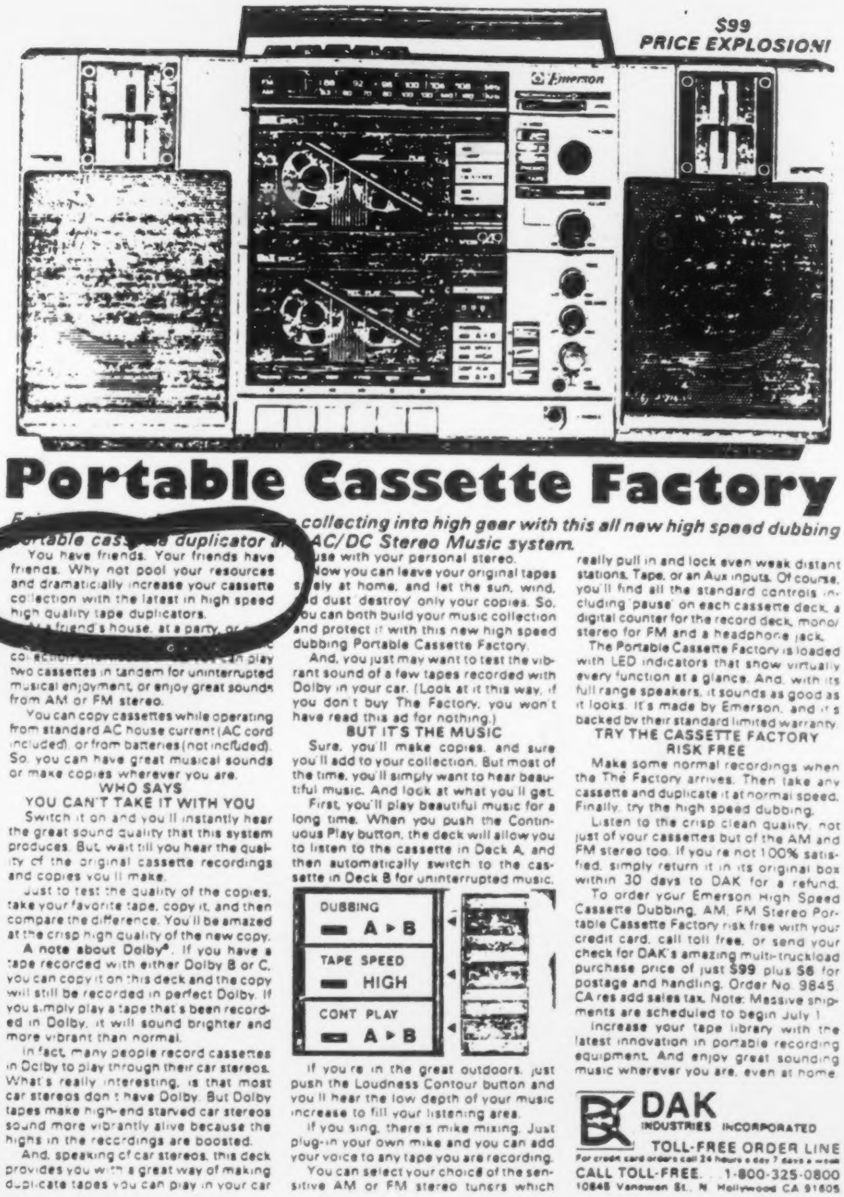
Save Money—Copy A Friend's Cassette ◄

Randix's new twin cassette recorder allows you to copy any tape within minutes. And with its balanced tape deck circuitry, the reproduction approaches the quality obtained in professional recording studios.

A state-of-the-art continuous play function automatically activates a second tape once the first one is finished. So you have double the listening time, without the inconvenience of changing tapes. Two four-way speakers (6" woofers and 2" ceramic tweeters) produce vivid, full range stereo sound. Sensitive AM/FM tuner allows for distortion-free reception. Includes headphone jack, pause button, and a 3-digit tape counter. Plugs into any AC power outlet or uses 6 D batteries (not included). Weighs 14 lbs. UL approved. 90 day warranty.

Order this ultra-compact (21x7x6½") entertainment system today and begin saving money immediately by turning inexpensive blank tapes into high quality stereo cassettes.

■ Randix Twin Recorder SCR#610 $129(6.50)


$99
PRICE EXPLOSION!
Emerson
DUBBING
A ▸ B
TAPE SPEED
HIGH
CONT PLAY
A ▸ B

Portable Cassette Factory

F[illegible] collecting into high gear with this all new high speed dubbing portable cas[illegible] duplicator a[illegible] AC/DC Stereo Music system.

You have friends. Your friends have friends. Why not pool your resources and dramaticially increase your cassette collection with the latest in high speed high quality tape duplicators.

At a friend's house, at a party, or [illegible] collection [illegible] can play two cassettes in tandem for uninterrupted musical enjoyment, or enjoy great sounds from AM or FM stereo.

You can copy cassettes while operating from standard AC house current (AC cord included), or from batteries (not included). So, you can have great musical sounds or make copies wherever you are.

WHO SAYS YOU CAN'T TAKE IT WITH YOU

Switch it on and you'll instantly hear the great sound quality that this system produces. But wait till you hear the quality of the original cassette recordings and copies you'll make.

Just to test the quality of the copies, take your favorite tape, copy it, and then compare the difference. You'll be amazed at the crisp high quality of the new copy.

A note about Dolby®. If you have a tape recorded with either Dolby B or C, you can copy it on this deck and the copy will still be recorded in perfect Dolby. If you simply play a tape that's been recorded in Dolby, it will sound brighter and more vibrant than normal.

In fact, many people record cassettes in Dolby to play through their car stereos. What's really interesting, is that most car stereos don't have Dolby. But Dolby tapes make high-end starved car stereos sound more vibrantly alive because the highs in the recordings are boosted.

And, speaking of car stereos, this deck provides you with a great way of making duplicate tapes you can play in your car [illegible]use with your personal stereo.

Now you can leave your original tapes safely at home, and let the sun, wind, and dust 'destroy' only your copies. So, you can both build your music collection and protect it with this new high speed dubbing Portable Cassette Factory.

And, you just may want to test the vibrant sound of a few tapes recorded with Dolby in your car. (Look at it this way, if you don't buy The Factory, you won't have read this ad for nothing.)

BUT IT'S THE MUSIC

Sure, you'll make copies, and sure you'll add to your collection. But most of the time, you'll simply want to hear beautiful music. And look at what you'll get.

First, you'll play beautiful music for a long time. When you push the Continuous Play button, the deck will allow you to listen to the cassette in Deck A, and then automatically switch to the cassette in Deck B for uninterrupted music.

If you're in the great outdoors, just push the Loudness Contour button and you'll hear the low depth of your music increase to fill your listening area.

If you sing, there's mike mixing. Just plug-in your own mike and you can add your voice to any tape you are recording.

You can select your choice of the sensitive AM or FM stereo tuners which really pull in and lock even weak distant stations, Tape, or an Aux inputs. Of course, you'll find all the standard controls including 'pause' on each cassette deck, a digital counter for the record deck, mono/stereo for FM and a headphone jack.

The Portable Cassette Factory is loaded with LED indicators that show virtually every function at a glance. And, with its full range speakers, it sounds as good as it looks. It's made by Emerson, and it's backed by their standard limited warranty.

TRY THE CASSETTE FACTORY RISK FREE

Make some normal recordings when the The Factory arrives. Then take any cassette and duplicate it at normal speed. Finally, try the high speed dubbing.

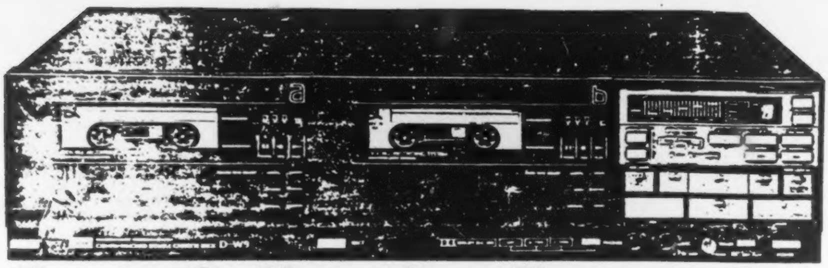
Listen to the crisp clean quality, not just of your cassettes but of the AM and FM stereo too. If you're not 100% satisfied, simply return it in its original box within 30 days to DAK for a refund.

To order your Emerson High Speed Cassette Dubbing, AM, FM Stereo Portable Cassette Factory risk free with your credit card, call toll free, or send your check for DAK's amazing multi-truckload purchase price of just $99 plus $6 for postage and handling. Order No. 9845. CA res add sales tax. Note: Massive shipments are scheduled to begin July 1.

Increase your tape library with the latest innovation in portable recording equipment. And enjoy great sounding music wherever you are, even at home.

DAK
INDUSTRIES INCORPORATED

TOLL-FREE ORDER LINE
For credit card orders call 24 hours a day 7 days a week
CALL TOLL-FREE. . . 1-800-325-0800
10845 Vanowen St., N. Hollywood CA 91605



Tape Collection Expander

Copying tape[illegible]lest thing this dual recording cassette deck with Dolby C, RMPS, and [illegible]quen[illegible]ecord and play [illegible]n do. It's much more than just two recording decks.

You're listening to FM. Suddenly you realize that a song you really like is being played. And unfortunately, you've already daydreamed through half of it.

Well, now you can build yourself a flawlessly recorded cassette collection of only your favorite songs almost effortlessly. Simply set this new relay recording dual cassette deck to record, 'tune-in' your favorite FM station, and leave.

When you return, you'll have one side of each cassette recorded with the music you missed. Then just start listening to the cassette in deck 'A'.

Whenever you hear a song you like, just touch one button and you'll compile a collection of tapes with just the music you like by copying them onto a blank cassette in deck 'B'.

And wait till you hear the [illegible] that these incredible decks produce. You're getting two true audiophile decks for less than the cost of just one.

A REAL DREAM MACHINE

It's the sound. The frequency response reaches 16,000hz with normal tape, 18,000hz with Chrome and 19,000hz with metal.

The signal to noise ratio is 58db without Dolby, 68db with Dolby B, and 78db with Dolby C. But, look at this. All these specs are for both decks, not just one.

You see, this all new dual cassette dream machine is really two separate cassette decks with 6 motors, and completely separate circuits housed in one dramatic high-tech black cabinet.

Wait till you use this deck. There's only one set of operational controls. You just push the 'A' or 'B' button before you push play, record, fast forward etc. And, if you want, just push the 'AB' button and both decks will spring to life.

To copy a tape, just put the recorded tape in deck 'A' and a blank cassette in deck 'B'. Then just push 'Dub'.

RMPS

And, speaking of automatic, this deck will search up to 15 different selections to find just the song you want. And, you can program it to play up to 3 songs in the order you choose. Of course, you can copy the selected songs as you listen.

SOUND ON SOUND

If you sing, this is the deck for you. Here's what you do. You can play a music tape on deck 'A', plug in a microphone and sing along while you record everything on deck 'B'.

Or, if you're really into professional applications, look at this. Record your own voice on either deck 'A' or 'B'. Then play the tape back in deck 'A' while you sing harmony to your first vocal.

Of course, you'll be recording your 'duet' on deck 'B'. Then take the tape from deck 'B' and put it in deck 'A' and repeat the process. Now you're a trio, then a quartet and finally a chorus.

With the incredible signal to noise ratio of this deck, you can really add on. Of course, you can do simple things like be a disc jockey and add your comments to any tape as it's being made. But singing along is really exciting.

DOUBLE RECORDING

In addition to the relay recording described above, you can make two identical recordings at the same time.

Each deck has a High-Bs hard permalloy head and a double-gap ferrite erase head. Each of the main transport motors is an electronically controlled DC motor for a maximum wow and flutter specification of just 0.04% (WRMS).

Each deck has a separate tape counter and each has automatic bias sensing. You can record Chrome in one deck and normal in the other automatically with no buttons to push. This is a very intelligent tape deck indeed.

And speaking of intelligent, it has a feature that is showing up more and more in high quality decks that I think we 'tape nuts' are just going to have to get used to.

This deck features Automatic Level Control for each deck. It does have a peak reading LED meter, but I think they put it in just to prove to us that it knows what it's doing.

And frankly, it does. You won't notice any of the dynamic range compression that I've always associated with automatic level control.

What you will notice is perfectly recorded tapes every time. I still miss the controls, but I must admit that the recording is flawless.

There is one recording level control. It's for the sound on sound mike recording. So, I guess they still need humans for something.

There's much more. You won't have to worry about where to start recording. Touch the tape 'lead-in' button and the deck will be automatically advanced past the leader.

If you have a timer, like the BSR system described on pages 3 to 5 of this catalog, you can set this deck to play or record when you are at work or asleep.

And, just one look at the control panel is enough to send the average astronaut into 7th heaven. There are mode indicators for virtually every function and audible indicators signal the actions.

The Tape Collection Expander is made by Sansui. It's their top of the line, and it sounds like it is. It is 17" wide, 4½" tall and 12¼" deep. They back it with a standard limited warranty.

EXPAND YOUR TAPE COLLECTION RISK FREE

Record from the most dramatic digital disk you own. Then listen to the tape. You'll be sold. Then copy the tape and listen to the copy. You'll find it hard to believe your ears.

You'll copy a friend's tapes, make fabulous live tapes and make spare tapes for your car and personal stereo. If you aren't 100% satisfied, simply return it to DAK in its original box within 30 days for a courteous refund.

To order your Sansui Tape Collection Expander risk free with your credit card, call toll free or send your check for DAK's breakthrough price of just $349 ($7 P&H) Order Number 9792.

Now you can have great music and total automation. And best of all, along with the audiophile quality, you can easily build a massive, totally personalized, tape collection that you'll enjoy for years.

("DAT"), is the tape version of compact disc ("CD") technology. Like the CD, it carries sound frequency information in the form of a digital signal. The tape cassettes for DAT machines will be about half the size of the analog audio cassette, yet they will hold up to two hours of music. (Sony is already predicting that a future generation of DAT machines will fit into the palm of the hand, and will offer recording times of four to six hours.)

Why is DAT such a threat? Because it eliminates any distinction between originals and copies. Because with DAT, every copy becomes a new original, the equivalent of the master recording, to be copied again, and again, and again. And because DAT is only a copying machine, serving no purpose currently other than home taping.

DAT technology will allow exact duplicates of a digitally prerecorded disc (CD) or tape (DAT)[6] to be made simply by transferring the digital signal onto a digital audio tape. The nature of this transmission ensures that there will be no loss of sound quality due to dust, needle or hardware noises. One need only compare the DAT to the brilliant sound quality and lasting durability of the CD to imagine the high quality of sound that these copies will have. Because DAT recorders eliminate the distinction between originals and copies, the combination of CDs and DAT machines will provide home tapers with a perfect master and a copying medium that allows infinite duplication of perfect copies. This means that the thousandth generation of a DAT tape will be identical to the CD from which the first copy was made.

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[6] We understand that the DAT recorders that have just been put on the market in Japan utilize a different sampling frequency for playback than recording, theoretically preventing digital-to-digital copying. In fact, however, there is nothing to prevent DAT hardware manufacturers from producing DAT machines which utilize the same sampling frequency for recording and playback. At various audio fairs, Hitachi and Sharp exhibited prototype DAT machines that are capable of such digital cloning. Nor is there anything to prevent the use of a frequency converter -- the technology for which already exists -- which will synchronize the frequency sampling rates of players and recorders. The chip for such frequency sampling rate converters is available for sale right now in the Sony catalog.

The Japanese electronics manufacturers also claim that their DAT machines will not be capable of digital-to-digital copying because of a digital flag code in copyrighted musical recordings on CD. Unfortunately, however, such a code is easily defeated -- by the use of a simple computer program and inexpensive semiconductor chips, or by the use of a "black box" (probably for under $50) that would eliminate the flag code.

In any event, these DAT machines do not limit digital-analog-digital copying. Such copying produces copies that are barely distinguishable from direct-input, digital-to-digital copies, and are therefore of just as much concern to the American music industry.

DAT will also significantly improve the quality of analog-to-digital home copying. Unlike existing analog recording, which experiences a loss of sound quality every time a new generation of copies is made, DAT will capture and preserve analog recordings with perfect fidelity. Moreover, subsequent copies of that DAT recording will perfectly replicate the original, with no degradation of sound quality. As the legal adviser to the London-based International Federation of Phonogram and Videogram Producers explains it, if a consumer with a legitimate tape made copies for two friends who each made copies for two more friends, "within 25 days you could provide the whole of the U.K. with a perfect copy."[7] As the Dempa Digest, a Japanese electronics newsletter, recently pointed out, "copies are the next best thing to direct-digital."[8]

It is inevitable that the principal impact of DAT technology will be to further reduce sales of prerecorded product. At present, record companies cannot even offer their prerecorded music for sale on DAT cassettes, because there doesn't exist a commercially feasible high-speed duplication technology for the manufacture of prerecorded DAT cassettes.[9] Only blank DAT cassettes will be sold. Thus, the current generation of DAT machines offers the music industry no new outlet for its prerecorded product -- but only another tool for tapers who wish to avoid having to buy CDs. This is of no concern to the Japanese equipment manufacturers, of course. As the Dempa Digest has explained, "the lack of pre-recorded software is not the hindrance for DAT that it was for CD because of the dubbing capabilities of the new recorders. This allows users to quickly build up a tape library. . . ."[10]

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[7] Asian Wall St. Jnl. Weekly, March 2, 1987.

[8] Dempa Digest, February 23, 1987 at 3.

In short, DAT technology has the potential to cause the home taping problem to escalate completely out of control. As Fumio Ohta, a Toshiba Corporation executive vice president, admitted to the Asian Wall Street Journal Weekly, "Home taping is the life of the market. To be able to record is a big drawing point. At the same time, [home taping] is a threat to the market" for music.[11] And as Donald J. Quigg, Assistant Secretary of Commerce and Commissioner of Patents and Trademarks, testified before the Senate Judiciary

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[9] The only technology for the manufacture of prerecorded DAT cassettes that now exists requires that cassettes be duplicated in "real time" -- in other words, it takes 40 minutes to duplicate a cassette containing 40 minutes of prerecorded music. This may be sufficient for the handful of small record labels that have indicated an intention to market their recordings on DAT, because the audience for their repertoire is relatively limited. It would not be possible, however, to fulfill the demand for mass-market recordings without high-speed duplication technology.

[10] Dempa Digest, February 23, 1987 at 4.

[11] Asian Wall St. Jnl. Weekly, March 2, 1987.

Committee last year on behalf of the Reagan Administration, DAT technology "can only be expected to provide greater incentives to home copiers, with a corresponding adverse impact on copyright owners."[12]

Finally, DAT can only exacerbate the problem of commercial record piracy throughout the world. For the first time, even Mom and Pop piracy operations will be able to produce cassettes that sound as good as the genuine product.

These are just some of the reasons why the anticipated introduction of DAT has struck fear into the hearts of the music industries throughout the world -- fear that the practices of home taping and record piracy will become even more widespread as tapers and pirates gain the ability to produce their own master-quality recordings.

"Copy-Coding" -- The Technological Solution

Fortunately, the music community need not be rendered helpless in the face of this new and sophisticated technology because the same wizardry that has produced machines capable of appropriating our musical recordings can likewise be used to protect them.

A new engineering device called "copy-coding" provides a practical and fair way to compensate music creators and copyright owners for the sales they lose when people tape their music rather than buy it. I will leave it to my colleague, David Stebbings, to explain how copy-coding works. But what I would like to focus on is why copy-coding is so attractive as a solution to the home taping problem, and why its application to the new DAT technology is such an inviting opportunity.

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[12] Statement of Donald J. Quigg on S. 1739 Before the Senate Committee on the Judiciary, 99th Cong., 2d Sess., at 3 (August 4, 1986).

We, and hopefully you, have been searching for an appropriate solution to the audio home taping problem for many years now. You have considered a compulsory licensing system under which royalties would be paid on blank tape and equipment, and we are grateful that the Senate Subcommittee did approve a royalty on audio recording equipment last year. But opponents have argued that royalties are too broad in scope and impractical to administer. And so we've been asked, "Isn't there some more focused technological solution?"

The answer is copy-coding. It is precisely targeted at those who copy copyrighted recordings, and no one else. It requires virtually no administration. There are no compulsory licenses, no royalty tribunals, no government bureaucracies. It is a technological solution to a technological problem.

Allow me to explain these points in greater detail: First, one of the most attractive features of copy-coding is that it is targeted: only those who attempt to tape encoded copyrighted musical recordings would be prevented from doing so under this approach. Those who tape piano lessons, class lecture notes or unprotected recordings (as well as all existing records, tapes and CDs) would remain untouched by this technological advancement because copy-code scanner chips would not interfere with such uses of DAT machines. The scanner chips would do but one thing -- enable us to protect future versions of our copyrighted recordings.

Second, copy-coding technology is a marketplace solution to the home taping problem. Once Congress has enacted legislation requiring manufacturers and importers to include copy-code scanners in their DAT machines, virtually no further governmental involvement would be necessary. Instead, in the best tradition of our economic society, the marketplace -- not the government -- would take over.

In the free market, creators and copyright owners would be able to make their own, individual determinations about how best to respond if there is a consumer demand for "copiable" recordings -- i.e., recordings that are not encoded or notched to prevent copying. At present, the person who buys a prerecorded cassette for his own listening pleasure, never to be copied for anyone else, has to pay the same price as the person who buys that same cassette with the intention of supplying copies of it to others.

This need no longer be the case with copy-coding. With this new technology, producers would be able to distinguish between these different classes of customers and consumers could choose the type of recording they want. A copiable version would have included in its price compensation for the artists, songwriters, musicians and copyright owners whose music is being taped. The person who does not wish to copy could buy the less expensive "uncopiable" version.

At least one record company has already announced its intention to market both copiable and uncopiable versions of its records, just as many software publishers right now market both copiable and uncopiable versions of their computer programs. Many other record companies can be expected to adopt similar policies. Those policies, like the value of the right to copy, would be established not by the government, but by the competitive marketplace.

The Reagan Administration, after very careful analysis, has strongly endorsed the copy-code system. Commissioner Quigg, in his testimony before the Senate

Judiciary Committee, described copy-coding as "the best approach for solving the [audio home taping] problem,"[13] and one that was particularly appropriate for the new DAT technology.

We couldn't agree more. The copy-code approach offers an attractive solution to the home taping problem generally; but applied to the new DAT machines, it offers a once-in-a-lifetime opportunity.

The Legislative Opportunity Presented by DAT

Historically, copyright law has almost always lagged behind technology, putting Congress in the often untenable position of trying to close the barn door long after the horses have already gone. Certainly, we have heard such concerns expressed repeatedly as we have pressed for a legislative solution to the home taping problem: How can we restrict the practice of home taping when for so many years music has been free for the taking?

I should note in passing the dubious logic of this proposition. Computer hackers once operated free of any legal constraints, but Congress did not hesitate to impose legal restrictions on their activities because of the greater public interest, even though those activities were conducted in the privacy of people's homes. Why then should Congress tolerate the perpetuation of unrestricted home taping when it has been shown to cause increasing damage to all who create and produce music and all who listen to it?

This is not to say that we do not recognize the difficulty of dealing with a problem as massive as home taping, especially when there are some 140 million machines already in people's homes. But that is precisely why the introduction of a wholly new technology such as DAT offers Congress such a unique opportunity -- to anticipate, rather than respond to, technology. DAT has the potential to be the predominant recording technology for generations to come. That means that, by acting now, Congress can influence the next several decades of recording machines in a constructive way. Of course this very targeted legislation will not solve the entire home taping problem; but it will at least help curb the problem for the future. Congress should take advantage of this rare opportunity to write on a clean slate; and to learn from experience by applying the lessons of analog home taping to the new digital technology before history repeats itself.

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[13] Statement of Donald J. Quigg on S. 1739 Before the Senate Committee on the Judiciary, 99th Cong., 2d Sess., at 11 (August 4, 1986).

Moreover, this legislative opportunity extends beyond our borders to the home taping problem encountered around the world. We have a rare opportunity to exert a positive influence on the legislative treatment of this next generation of recording technology. As the world's leading exporter of music, it is natural for other nations to look to the U.S. to see how it protects its own creative community. Our failure to act on DAT will be perceived as a signal that American music is fair game for poachers throughout the world.

Our failure to act would also be inconsistent with the trend in other nations to protect intellectual property rights in music. Nearly a dozen other countries have adopted royalty systems to deal with the home taping problem. Now the EEC is considering the use of the CBS copy-code system to respond to the new generation of digital machines. Representatives of the Commission have already informally notified MITI (the Japanese trade ministry) that they are likely to require the installation of copy-code scanners in all DAT machines manufactured in, or imported into, the Common Market. The concurrent consideration of a common approach by both the Europeans and the Americans offers an invaluable opportunity to forge a worldwide consensus on a truly international problem. The Congress should not pass up such an opportunity.

The Trade Implications of DAT

The advent of DAT machines not only impinges upon the intellectual property rights of creators and owners, but it affects the U.S. balance of trade as well. I used to think that all you needed to succeed in world trade was a really good product. We have such a product -- it's called American music, and it's the most sought after music in the world. From Billy Joel to Huey Lewis, from Benny Goodman to Alabama, our music is heard literally around the world. With an export product like that, you would think that America's music industry would be among the most competitive in international trade.

But its competitiveness is being hurt -- not because the creative community of other countries is producing better music, but because their engineers are producing taping machines that enable our customers to obtain our music without paying us for it.

Just as most of the premium blank tape and recording machines now used for the home taping of music originate in Japan, so will DAT tapes and machines likewise come from Japan. (I know of no American companies that are planning to manufacture these devices.) It is these foreign hardware manufacturers who now benefit from the home taping of our prerecorded product and it will be these same manufacturers who will be enriched in the future if DAT machines are allowed to cause the home taping problem to escalate to even more massive proportions.

With DAT, the Japanese electronics industry will continue to increase its profits at the expense of American creators and producers of music. Meanwhile, the American music industry -- one of the few American industries that returns a positive trade balance to the United States -- continues to lose revenues and becomes less able to offer a diverse variety of musical recordings. Consequently, the new music available to the public and the quantity and variety of musical export products will diminish. The end result will be the further weakening of yet another American industry.

That is why the Reagan Administration has included a DAT provision in its "Competitiveness Initiative" -- so as to preserve the competitive vitality of the American music industry. The lobbyists for the Japanese electronics companies contend that DAT isn't really a trade issue, yet the Japanese government itself appears to regard it as such. Delegations from MITI have been sent to the U.S. to discuss the problem with USTR, and the Japanese electronics industry has poured seemingly limitless resources into its effort to defeat any legislative proposals on DAT. Obviously they believe this issue to be of great economic consequence to their trade opportunities in the U.S.

Moreover, as far as the Japanese government is concerned, copyright law is just another element of its trade policy. For example, when the Japanese adopted legislation in 1985 to give copyright owners the right to control the commercial rental of records, they extended the protection only to Japanese recordings. They refused to extend the benefits of their legislation to American recordings.[14]

Remember, finally, that the DAT issue is not a question of free market competition. The Japanese machines do not write better songs; they simply copy our songs and thereby displace American sales. They offer no new opportunity for America's music community to sell its wares; they offer only the capability to copy the music we had hoped to sell.

The Japanese DAT manufacturers must be told, in no uncertain terms, that their parasitic practices cannot continue. The United States should not put itself in the position of providing a market for their new technology until and unless these machines are equipped with technological protections for American creators and copyright owners.

The Need for Prompt Legislation

The DAT machines will be arriving in the U.S. market as early as this summer or fall. Before that time, before a single DAT machine has been sold, the Congress should enact legislation to require hardware manufacturers to install copy-code scanners in DAT machines that are shipped in interstate commerce.

Prompt approval of such legislation will send the Japanese electronics manufacturers a much-needed message -- that their continued disregard for American intellectual property will no longer be tolerated.

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[14] By contrast, the Record Rental Amendment enacted by the U.S. Congress in 1984 imposed no similar restriction in U.S. law, but extended the benefits of that legislation to all copyright owners regardless of nationality.

It is important to note that, since it is the threat to intellectual property posed by the new DAT technology that gives rise to our fears, it is ultimately intellectual property law that should govern the response. The legislation we seek, therefore, does not attempt to devise the definitive resolution of either DAT, or home taping. Rather, it is intended to provide a breathing period during which the status quo will be maintained. During that period, the home taping problem as it currently exists will get no better; but at least, insofar as DAT is concerned, home taping will not get any worse. That breathing period will give the Congress the time it needs to consider the issue in a more deliberate fashion, and craft a comprehensive solution to the problem.

For now, we are asking only for interim relief, a short term remedy designed to avoid the permanent foreclosure of the technological solution to the DAT problem. But prompt action is critical. Any further delay in responding to the introduction of DAT machines will only play into the hands of the Japanese electronics industry. That is why we urge Congress to act now on interim legislation to require copy-code scanners in DAT machines.

Conclusion

It is difficult and frightening to imagine our country without the beautiful sounds emanating from the American music community. We take for granted our position in the world music market and continue to deceive ourselves into thinking that our musical products will always be abundant and coveted by the rest of the world.

We must not forget that a national treasure --

our music industry -- can be lost if we do not protect it through our laws. The Congress now has the opportunity to do so, to pave the way for the continued production of diversified music, to devise new laws under which advances in technology can be reconciled with the reasonable needs of our intellectual property community. By doing so, the Congress would be looking to the future in protecting not only the interests of creators and copyright owners, but those of listeners and lovers of music everywhere.

The prompt enactment of interim DAT legislation is vital to the preservation of the American music industry. We strenuously urge your support.

ANSWERS TO QUESTIONS POSED BY SENATOR DECONCINI TO JAY BERMAN

1. As I understand your argument, you believe that DAT creates copies that are so close to the original that there would be no need for anyone to buy prerecorded software. As of now, however, the DAT technology only allows analog copies to be made even of digital recordings. If we should act at all, shouldn't we wait until a technology is developed, if it is, that would improve home copying to the point where it could be the threat that you say it is?

The Japanese manufacturers of DAT recorders contend that their machines can make only analog copies of digital recordings, and are not capable of making digital-to-digital copies because of protective devices that have been built into the recorders. These devices do not prevent, however, digital-to-digital copying because they can be so easily circumvented, and they do nothing to control digital-analog-digital copying, which is equally damaging.

The manufacturers rely on two methods of preventing digital-to-digital copying. Both were adopted as part of the DAT Conference Standard, which is only a voluntary agreement among various equipment

manufacturers. It is subject to change at any time, and is not binding on manufacturers who did not participate in the Conference. Thus, there is no guarantee that either of the "protective" methods touted by the manufacturers will provide any protection at all over the long term.

The first protection that the manufacturers claim is that digital-to-digital copying will not be possible because DAT machines will record at a different "frequency sampling rate" than that at which CDs are played. The technology already exists, however, for DAT machines that record at a frequency sampling rate identical to the rate at which CDs are played. In fact, such machines already exist -- they have been shown as prototypes at recent audio fairs and consumer electronic shows by manufacturers such as Sharp and Hitachi.

Also, technology exists for the manufacture of "converter boxes" that can harmonize the frequency sampling rates of DATs and CDs. Sony already sells the chip needed to build such a converter box.

The second method upon which the foreign manufacturers of DATs rely is the "digital flag code" that accompanies the copyrighted music. That flag code is also easily defeated in a number of ways. Anyone familiar with computers can write a simple computer program to switch off the flag code so that it will not prevent recording. That program could be used in conjunction with inexpensive semiconductor chips to permit digital-to-digital recording. Or, one could build or buy a "black box," probably for less than $50, which would eliminate the flag code.

Thus, the manufacturers' so-called protective devices do not effectively stop the digital-to-digital copying that they are designed to prevent. Even putting that critical flaw out of mind, it is important to note that the machines can still make digital-analog-digital copies that just as completely undercut the copyright protection of the recording. All the home taper would need to do is plug the CD player into the DAT, either directly, with a standard RCA connecting cable, or indirectly, through a stereo receiver.

The Japanese DAT manufacturers have discounted our concerns about digital-analog-digital copying. They claim that such copying would entail enough degradation in the quality of the recorded copy that home tapers would not really be interested in making or collecting such copies.

The DAT manufacturers claim that the degradation in sound that occurs when someone makes a digital-analog-digital copy would be a loss of about 10dB of signal-to-noise ratio compared to the original digital recording. The 10dB figure is far too high; engineering studies indicate a loss of only 3dB. But even if the loss were as high as 10dB, for most people the difference in sound quality between the copy and the original would be inaudible. The copy would still be of vastly improved quality over what is available through existing technology. With the highest fidelity analog recorder now available (equipped with the Dolby C noise reduction system), audiophiles can enjoy a signal-to-noise ratio of 75dB. With a DAT machine, the signal-to-noise ratio can be as high as 98dB. Even after running the digital signal from a CD to a stereo receiver to the DAT machine, tapers will still enjoy a signal-to-noise ratio of 88dB. This means that a digital-analog-digital copy will sound four to five times better than the best available analog tape. Moreover, that copy can then be used to produce digital clones, with no loss of quality from copy to copy, when the home taper uses two DAT machines connected together.

Thus, even if the manufacturers' protective devices designed to prevent digital-to-digital copying really worked, the manufacturers have provided no protection at all against digital-analog-digital copying. This is not a case, therefore, where we must await the development of a technology that improves home copying to the point at which it becomes a serious threat; that time has already arrived. The threat to American intellectual property exists now, and the time to act is now.

Congress has a unique opportunity in this case to act now, to write the law in advance of and in anticipation of the new technology, rather than waiting consumer expectations have been established.

2. There are two kinds of home taping. Copying copyrighted material for commercial use is clearly illegal, and I will strive as Chairman of this subcommittee to protect copyright holders from piracy. But home taping for personal use is arguably "fair use" under the copyright laws. How does the proposed DAT legislation maintain this distinction?

Under Section 106(1) of the copyright law, the copyright holder is granted an exclusive right to reproduce the copyrighted work. There is no statutory exemption that permits "personal" copying merely because it is not commercial. Nothing in the copyright statutes distinguishes between "personal" copying and commercial copying.

The claim that the Copyright Act contains such an exemption rests upon a single passage in the House Judiciary Committee's report on the Sound Recording Amendment of 1971. That statute extended copyright protection to sound recordings; it was addressed to the problem of commercial record piracy. Additional comments on the home recording issue were made in hearing testimony and on the floor of the House. For two reasons, these isolated references to home recording in the 1971 proceedings do not rise to the level of establishing an implied home taping exemption under the 1976 Copyright Act.

First, the 1971 Amendment itself contained no home recording exemption. There was absolutely no mention of home recording in the Senate deliberations over the 1971 statute. Thus, there is no justification for inferring a congressional intent to create an audio home taping exemption either from the 1971 Amendment or its legislative history.

Second, and even more significant, the House references to home recording pertained to a statute that was repealed by the comprehensive revision of the copyright law in 1976. The current legal status of audio home taping must be determined pursuant to the Copyright Act of 1976 -- not pursuant to the legislative history of the obsolete 1971 Amendment. As already noted, the 1976 Act does not contain any exemption for audio home taping beyond the potential defense of fair use. Indeed, the legislative history of the 1976 law incorporates verbatim much of the language contained in the House report accompanying the 1971 Amendment -- but it omits entirely the passage referring to home recording. As Professor Nimmer concludes, "[e]ven if . . . [there were] a home-use exemption in the 1971 Amendment, there is no suggestion in the legislative history that the 1976 Act incorporated a similar exemption." Nimmer, "Copyright Liability for Audio Home Recording: Dispelling the Betamax Myth," 68 Va. L. Rev. 1505, 1516 (1982).

The only conceivable basis for exempting home taping from the provisions of Section 106 would be the fair use doctrine, addressed in Section 107 of the copyright law.

The doctrine of fair use immunizes certain uses of copyrighted works from infringement liability, based upon consideration of four statutory factors:

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

(2) the nature of the copyrighted work;

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

(4) the effect of the use upon the potential market for or value of the copyrighted work.

None of these factors, however, justifies the conclusion that home taping of copyrighted sound recordings should be considered a fair use.

First, home taping is a commercial use within the meaning of the "fair use" provisions despite the fact that the home taper may not charge for his or her copies. The Supreme Court has said: "The crux of the profit/nonprofit distinction is not whether the sole motive of the use is monetary gain but whether the user stands to profit from exploitation of the copyrighted material without paying the customary price." The late Professor Nimmer agreed: "The individual who engages in audio home recording may not be seeking a commercial advantage by selling the recordings, but for fair use purposes his motivation is nevertheless commercial. By engaging in audio home recording, he avoids the cost of purchasing records or prerecorded tapes."

Second, copyrighted records and tapes are sold for the purpose of entertainment. The home taper seeks to use the copyrighted work for the same purpose. One court has said that "a finding that the alleged infringers copied the material to use for the same intrinsic purpose for which the copyright owner intended it to be used is strong indicia of no fair use."

Third, home tapers record entire musical selections. Their appropriation of the copyrighted work is total.

Fourth, the economic effect of copying on the potential market for the copyrighted work grows is so severe that the defense of fair use cannot be invoked. The studies, market statistics, and economic analysis of the home taping problem vividly document home taping's adverse effect on sales of records and prerecorded tapes. The displaced sales, lost because of home taping, cost the recording industry $1.5 billion annually. As Professor Nimmer states in his article (at p. 1524)

> These studies merely confirm what is empirically obvious: audio home recording does have a devastating impact on the market for music and sound recordings. If this fourth factor is ever to militate against application of the fair use defense, it must do so in the case of audio home recording.

In testimony before Congress, Commissioner Quigg agreed with this assessment. He stated that the sheer magnitude of the home taping problem, that is, its aggregate commercial impact on the marketplace, takes it completely out of the domain of fair use.

A separate consideration sometimes cited in support of the fair use defense is that audio taping occurs in private homes. Professor Nimmer emphasizes (at p. 1525) that this does not make home taping a fair use:

> If given conduct is unlawful -- such as child abuse, for example -- the fact that the conduct occurs in the privacy of the home may make it difficult to enforce the law . . . . Yet this does not make child abuse in the home lawful. Likewise, enforceability and privacy problems may deter civil copyright infringement actions for audio home recording, but that in itself does not make such recording fair use.

Thus, there is no personal use exemption, nor any fair use immunity for home taping. Contrary to the premise of the question, there is no distinction between commercial and personal home taping.

3. In your opinion why has no Court in the United States ever held that there is no distinction between home taping for personal use and copying for commercial use? Can you cite any case law for the proposition that home audio taping for noncommercial purposes violates the copyright laws?

4. How many cases has the recording industry brought to

protect its copyrights under the theory that noncommercial home audio taping is not a fair use under the copyright laws? Wouldn't it be more appropriate for the industry to be trying to prove its copyright arguments in court rather than in Congress?

We provide responses to these two related questions together.

There is no case law on this subject because no recording company has ever asked a court to try to solve a problem that can only be resolved by the Congress. Assume for the moment, that a court were to hold that noncommercial home taping violates the exclusive right of the copyright owner to control reproduction of his work; what then?

Even if our rights were established as a matter of law, courts would be powerless to enforce them. A judicial holding that home taping is contrary to statute would do virtually nothing to ameliorate the problem. That much is perfectly clear from the video industry's experience with the judiciary in the Betamax case, where the courts made plain that only Congress could craft an appropriate solution to the home taping problem. Indeed, the one principle on which every member of the Supreme Court agreed in that case was that the home taping problem has to be solved by Congress, not the courts.

Were we to bring a case for infringement against the home taper, we could prevail under existing law. It would be futile to attempt to enforce our rights against the home taper, however, because of the obvious practical difficulties of bringing millions of such cases and because the music industry has no wish to invade the privacy of tapers. And if we were to proceed nonetheless and prevail, the courts would only send us back to the Congress for a remedy anyway.

We remain convinced, therefore, that the Congress has been, and remains, the singularly appropriate forum for resolving the home taping problem.

5. If DAT machines were rendered so that they could not be used for copying, would they be any more useful than compact discs? If there were no real difference, why would people want to buy them? If we were to require that only DAT machines that could not be used for taping were able to be sold, wouldn't we be in effect banning DAT for sale in the U.S.?

First of all, our proposal is not to render DAT machines incapable of copying. The copy-code scanner system would only control the unauthorized duplication of copyrighted musical recordings.

This is a significant point. It means that consumers would be free to use their DAT machines for all taping of noncopyrighted items. In his testimony before the House Subcommittee on Commerce, Consumer Protection and Competitiveness, Mr. Ferris reiterated a point that he has made many times before: "Most tapes made by consumers are of something other than prerecorded music." According to the Home Recording Rights Coalition, then, DAT machines would be able to be used for the majority of taping that consumers are supposedly doing.

It is also important to note that the proposed copy-code scanner solution would be entirely prospective in application. Consumers would be able to tape all of the records, tapes, and CDs that they presently own. Nothing that is presently for sale in the marketplace has been encoded. Also, in the future, some record companies are likely to provide copiable versions of musical recordings. DAT machines would be able to copy those as well. It is erroneous, therefore, to say that DAT machines that cannot record prerecorded, copyrighted music could not serve any useful purpose, and that enactment of the copy-code scanner solution would be tantamount to banning DAT machines.

Moreover, the argument that DAT machines would be useless unless they can copy copyrighted music is equivalent to arguing that the American music community ought to sacrifice sales of its product so as to enhance the marketability of the Japanese manufacturers' new technology. This is patently unfair. By the same token, it would aid sales of compact disks if Sony were to give away its CD players for free, but I suspect that Sony would balk at doing so, too.

Finally, Charlie Ferris reiterated in the hearing before the Senate Communications Subcommittee a point he has made several times before: that the predominant use of the DAT machines would be "playback." The Home Recording Rights Coalition cannot have it both ways -- they cannot argue that the machines will have no value and no market if they are incapable of unauthorized duplication of copyrighted music, and that the machines would not be used for that purpose by consumers who purchase them.

6. To your knowledge are any American record companies preparing or desiring to release prerecorded DATs?

a. Are any major American record companies preparing to market prerecorded DATs?

b. I understand that at least one record company has announced that it will not market prerecorded DATs until the home taping problem is solved. Has the RIAA had any contact on this subject with any of its member record companies?

c. Should Congress be concerned about the antitrust implications if all major American record companies decide not to market prerecorded DATs?

Several small American labels have announced their interest in releasing prerecorded DAT cassettes.

a. None of the major American record companies has announced an intention to market DAT cassettes, and according to press reports, several have indicated that they will not do so until the home taping problem is addressed in Congress.

The reason that none of the major American record companies has, to our knowledge, made plans to offer prerecorded DATs is that there is presently available no technology for the commercially feasible mass production of prerecorded DAT cassettes. The only available technology involves "real time" duplication, that is, it takes 45 minutes to make a copy of a 45-minute-long musical recording. This kind of technology may be suitable for smaller labels because they have a repertoire that appeals to a limited audience. Their production runs would be smaller than the production of a major label. Therefore, the smaller labels may find that they can make a financially sound decision to enter the market for the sale of DAT cassettes with the presently available technology.

b. RIAA has not discussed with its member record companies their business decisions regarding the marketing of prerecorded DAT cassettes. That is an individual decision that each company must make on its own.

c. At least one American record company has already announced its intention to market both copiable and uncopiable versions of its prerecorded music. We cannot say whether all record companies would follow suit, but if there is sufficient consumer demand for copiable versions for prerecorded music, we assume that the record companies would attempt to respond to that demand.

d. The antitrust laws apply to the record industry, just as they apply to any other industry. If there were any evidence of an antitrust violation, we are confident that the appropriate government authorities would investigate.

7. If legislation were to require, or the manufacturers agreed to voluntarily include, copy-code scanners on domestically sold DATs, would the American record companies provide both encoded and non-encoded prerecorded software?

a. What would be the price differential?

b. Where would the amount of money representing the difference in price go?

c. Isn't the requirement that DATs be sold with copy-code scanners the same thing as legislation we considered last year that required copy-code scanners in all tape recorders except that this year's proposal does not have the safeguards to composers, artists, unions and struggling or non-pop artists? What is different here? You get to charge more for a copiable software and keep the difference without any requirement for distribution?

As indicated above, at least one American record company has already announced its intention to market both copiable and uncopiable versions of its prerecorded music. We cannot say whether all record companies would follow suit, but if there is sufficient consumer demand for copiable versions for prerecorded music, we assume that the record companies would attempt to respond to that demand.

a. We have no idea what the price differential will be, nor are we in a position to inquire of our member companies because of the restrictions imposed by the antitrust laws.

b. Last year, the music industry held negotiations to develop a royalty distribution system for the blank tape and recording equipment royalties that the 99th Congress considered. (The agreement reached is described in detail in Home Audio Recording Act: Hearings on S. 1739 Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary, 99th Cong., 2d Sess. 570-75; 581-89 (1986).) At the same time, discussions were also held on a system for distributing funds earned from the sale of copiable recordings, in anticipation of the possibility that Congress might legislate a technological solution to the home taping problem.

Most artists' contracts call for the payment of a royalty calculated as a percentage of the retail or wholesale selling price of the recording. Since copiable recordings would likely be sold at a higher price, artists' royalty payments would automatically be increased in accordance with existing contracts. As new contracts are individually negotiated with new artists, and as old contracts are individually renegotiated, further arrangements can be made for the disposition of income from the sale of copiable versions of musical recordings.

Payments made to musicians' funds would be handled pursuant to collective bargaining arrangements with the American Federation of Musicians and AFTRA.

With respect to music publishers and composers, in anticipation of congressional action on the legislative proposal that involved adoption of royalties, an arrangement was negotiated for an increase in mechanical royalties paid under the provisions of Section 115 of the copyright law. That agreement provides that the royalty for a nonencoded phonorecord would be determined by first multiplying the royalty payable for the same phonorecord in encoded form by a fraction, the numerator of which would be the wholesale price of the nonencoded phonorecord, and the denominator of which would be the wholesale price of the encoded phonorecord. The resulting product would be multiplied by a factor of 1.25, then added to the royalty payable for the same phonorecord in encoded form.

This arrangement would require a technical amendment to Section 115. All the parties affected by that statutory provision are amenable to such an amendment.

Thus, the recording industry has made every effort to ensure that funds realized from the sale of copiable recordings will be shared equitably among members of the American music community.

c. The legislation that Congress considered last year did not require copy-code scanners in all tape recorders; rather it provided an exemption from royalty payments for equipment that contained copy-code scanners. As indicated, in the context of that legislative proposal, the industry conducted careful negotiations that led to agreement on the disposition of both (i) royalty income and (ii) the income that could be generated by the sale of copiable recordings. Under those arrangements, record companies do not get to keep the difference. The additional income would be distributed in the manner described above.

QUESTION POSED TO DAVID STEBBINGS AND REFERRED TO JAY BERMAN

1. Doesn't the statement that the record companies may supply unencoded copiable prerecorded DAT cassettes, undermine the argument that DAT will facilitate commercial piracy?

True commercial pirates, those who have made a business of unauthorized, large-scale duplication of copyrighted music, will always be willing to spend whatever amount of money it makes sense to spend to protect the profitability of their illegal operations. Thus, the incremental opportunity that copiable versions of prerecorded music would afford commercial pirates is not significant. That is, copiable versions provide no added incentive to commercial pirates to continue their operations, nor would the unavailability of copiable versions necessarily close down commercial pirates' operations.

At least one recording company that we know of is considering offering copiable versions of its music to meet whatever consumer demand the market may register in this regard. Because the availability of copiable versions of prerecorded music is likely to have little or no influence on the volume of commercial piracy, we believe it is appropriate for recording companies considering whether to offer copiable versions to focus more on the interests of and the benefits to consumers, and less on the impact their decision may have on commercial piracy.

QUESTIONS FROM SENATOR PATRICK LEAHY TO JAY BERMAN

1. I really don't think that Congress should require that DAT machines carry a copy-code scanner without some assurance that the record industry would make copiable and uncopiable versions of software available to consumers.

Can you assure the Subcommittee that the music industry would make available both copiable and uncopiable versions of software prerecorded on Digital Audio Tape? Which other formats would be made available in copiable and uncopiable versions?

One company has so far announced its intention to market prerecorded DAT cassettes in both copiable and uncopiable versions. Depending upon the marketplace response, and consumer demand, other companies may follow suit. It is appropriate, we believe, to rely on the marketplace to guide such business decisions. The marketplace has guided the computer industry, for example, which sells both copiable and uncopiable versions of its software. We believe that the marketplace can and will work for music as well.

Thus, at this point we cannot say how many companies will offer music in both copiable and uncopiable versions, and it would be inappropriate for us to inquire of our member companies about their plans in this regard because of the restraints of the antitrust laws.

Although the encoding technology could be used on any format in which prerecorded music is provided, we presently know of no companies that plan to encode music on any format other than compact discs. It is likely that record manufacturers would also encode digital audio tapes when they eventually become available in the marketplace, but we do not know of any company that has firm plans in that regard, since the mass marketing of DAT cassettes does not appear to be an immediate prospect.

2. An editorial in the April 6, 1987 Washington Post commented that many of the copy-code chips will be out of the recording equipment 30 minutes after the consumer gets his machine home. How can we be certain that the

copy-code scanner will not be circumvented by the consumer? How can we be certain that the copy-code scanner will not become obsolete in the near future?

As indicated by David Stebbings in a response to another question, it would be very difficult for a consumer, or even an electronic hobbyist or a professional, to bypass the copy-code scanner chip.

First, it is important to note that the copy-code scanner chip would not be placed in the machine as a single isolated component. It would be part of a large-scale integrated (LSI) circuit. Removing the LSI circuit would affect the DAT machine in numerous ways, not the least of which is that it would completely disable the recording mechanism. Thus, it is not just a question of removing the LSI; one would also have to be prepared to replace the LSI with circuitry that would enable the DAT machine to perform all of the functions that had been controlled by the removed LSI. It seems unlikely that a consumer would be willing to dismantle a $1300 machine and risk not being able to reassemble it.

Second, the mechanical removal and replacement of an LSI is no simple project. It must be removed and replaced with soldering equipment heated and held at exactly the right temperature, with precisely the right solder flow. In the manufacturer's factory, these operations are accomplished by precision machinery. They would be very difficult for an individual to replicate by hand.

Of course, "professionals" who are intent on bypassing the copy-code scanner chip may be willing to go to considerable expense to accomplish their goal, especially if there is the possibility of commercial remuneration for their efforts. The proposed legislation makes it illegal, however, for anyone to provide, in commerce, a service for the purpose of bypassing or disabling copy-code scanner chips.

We would not be so presumptuous as to claim that the copy-code scanner is perfect in the sense that it is totally undefeatable. But our engineers have designed and developed the system in a way that creates formidable obstacles to disabling or bypassing the copy-code scanner.

Likewise, we do not exclude the possibility that future developments might provide a better technological solution to the DAT home taping problem. We are open to all such possibilities. Such developments would not make the copy-code scanner "obsolete," however. The goal of such future solutions would be the same as that of the copy-code scanner system: to control the unauthorized duplication of copyrighted music. Thus, such future systems would operate in parallel with the copy-code scanner solution, providing the same protection to future generations of copyrighted music as the copy-code scanner system will provide the copyrighted music of today, if and until new developments make other solutions more viable.

QUESTIONS FROM SENATOR HATCH

Questions to Panel 1 (including both sides of issue).

1. In the 1984 Betamax case, the Supreme Court sanctioned the time-shifting purpose of video home taping as a fair use, even though reproduction of an entire work generally would not warrant a fair use exemption. In what ways might DAT taping be distinguished from the Betamax holding? Why should DAT taping not be considered covered by the Betamax ruling?

The Betamax case only addressed video recording. Audio recording was specifically excluded from the Court's holding. 464 U.S. at 430, n.11.

The time-shifting concept was central to the Court's decision in Betamax. The Court recognized the legitimacy of that practice as a facet of the fair use doctrine, and decided the case on that basis, and on the basis that there had been no demonstration of harm resulting from video taping. Neither of these factors apply, however, in the context of audio home taping.

The concept of time-shifting has nothing to do with audio recording. People do not record albums in order to listen to them later. Unlike video copies made for the purpose of watching a broadcast at a more convenient time, music recordings made by copying become part of the home tapers' permanent collection or library. If people were not taping and "librarying" music, why would 300,000,000 blank cassettes a year be sold in the United States?

Charlie Ferris, the spokesman of the Home Recording Rights Coalition, attempts to bring his case within the protection of the Betamax opinion by transmuting the Supreme Court's discussion of time-shifting to "play shifting." The Home Recording Rights Coalition argues that home taping is really just the innocent practice of shifting the playing of a musical recording from one playback device to another. But this neologism makes no sense. Someone who has bought a turntable does not get a CD player for free simply because he or she paid for the turntable. If a consumer wants to watch a movie in Washington, he has to pay the price of a ticket. It does not matter that he may already have seen the movie, and paid the royalties reflected in the admission price at a theatre in New York. Likewise, if you do not want to carry a bulky hard-cover book to the beach, but prefer to bring a paperback, you cannot go into a bookstore and demand a paperback for free just because you have already purchased the hard-cover edition. So it is with music: If you have already bought a record or a CD, and you decide that you want a tape cassette version, you should pay for it. The concept of play shifting is nonsensical and unfair.

In further contrast with the Betamax case, there is abundant evidence that the home taping problem is causing demonstrable damage of large proportions. As stated in response to an earlier question, economic studies of the home taping problem have shown that the recording industry loses $1.5 billion -- one-third of the industry's revenues -- annually due to sales displaced by home taping. This puts the home taping problem on an entirely different footing from the video taping issue considered in Betamax.

2. Section 107 of the Copyright Act specifies certain kinds of copying that are considered fair uses. For example, making copies for classroom use by a teacher or for news reporting by a reporter or for other scholarly and research purposes is not an infringement of copyright. Would insertion of a copy-code scanner make it impossible for individuals to copy for one of these permissible uses under current copyright?

The determination as to whether a particular use is a fair use does not turn automatically on the nature of the use. The determination is to be made on a case by case basis with due consideration of the factors set forth in Section 107. Thus, one cannot automatically conclude that a particular educational use will necessarily fall into the category of fair use.

Moreover, the aggregate impact of home taping outweighs claims that this use is a fair use. As Commissioner Quigg has pointed out in Congressional testimony, the sheer magnitude of the home taping problem, that is, its aggregate commercial impact on the marketplace, takes it completely out of the domain of fair use.

Specifically, with regard to musical recordings, as a practical matter, and as a matter of common sense, the fair use doctrine would seem to have little application. Think of your own experience -- how many times would a classroom teacher or a news reporter really need to make copies of copyrighted music for scholarly or research purposes? This is simply not the type of activity that is commonly necessary for the legitimate kinds of purposes the fair use doctrine contemplates.

In any event, if copiable versions are made available, as seems likely in response to market demand, these kinds of uses would be possible.

3. I would like to follow up on this report to some degree. Congress has specifically included in our copyright system a fair use doctrine for some important reasons. Essentially Congress wanted to permit and encourage copying of portions of work for scholarly or educational reasons. How could the technological solution accommodate these purposes for the fair use doctrine?

The response to this question is contained in large part in the response to question 2 above. We add only that the fair use doctrine is an old concept that has been part of the body of law, both common and statutory, that has governed copyrights for nearly 150 years. It long predates the advent of technology that now challenges and strains its application. The kinds of reproductions that existed at the time the doctrine was developed were limited to verbatim copying by hand from printed material.

The fair use doctrine is intended to be a "safety valve" that provides some flexibility in judicial application of the copyright laws, so that all reproductions do not amount to infringements. But the doctrine was never intended to provide a guarantee that every technological development that aids reproduction will be permissible under the copyright laws. The doctrine must evolve as technology does. Thus, the conclusion that the fair use doctrine does not embrace home taping is not at odds with the rationale of the doctrine. And the control of unauthorized duplication of copyrighted music that the copy-code scanner would put into effect does not run afoul of the fair use doctrine.

4. I would like to address to the opponents of legislation to implement a technological solution the following question: You have noted that the copy-code scanner interferes with the music recording process.

Rather than damage the recording capabilities of your DAT machines, would you prefer a modest royalty on those devices to protect the purpose of copyright law?

The question is addressed to the Home Recording Rights Coalition, thus we provide no response.

5. To the proponents I address a similar question: Would you be satisfied with a modest royalty on DAT recording devices instead of a technological solution?

We have consistently maintained that home taping is a problem for which we must find a solution. We have not claimed to possess the exclusive wisdom on what solution would best serve the purpose of protecting intellectual property rights guaranteed under the copyright laws. We would be willing to engage in discussions concerning any viable response to the home taping problem.

We should note, however, that with respect to the DAT aspect of the home taping problem, we believe that the proposed technological solution, the copy-code scanner system, is the most appropriate. DAT is a new technology that has not yet entered the market. Congress is thus in a unique position to legislate a true marketplace solution for the future, rather than attempting to institute what would be an imperfect system for compensating composers and other copyright holders for losses due to DAT home taping.

The difficulties and imperfections of a governmentally imposed royalty system have convinced the Reagan Administration to support the copy-code scanner solution rather than a royalty system. Commissioner Quigg testified on this issue last year. He stated that because royalties would have to be set and distributed in some arbitrary fashion that did not truly reflect the economic values and costs involved, and because of the onerous regulatory burden involved in such a system, "[a] preferred solution would be to prohibit the manufacture, sale, or importation of new machines without a decoder element." Statement of Donald J.

Quigg, Assistant Secretary and Commissioner of Patents and Trademarks on S. 1739 Before the Committee on the Judiciary, United States Senate, August 4, 1986 at 7.

6. How soon will DAT recorders appear on the American market? What effect will this have upon the market for audio recording machines?

This information is in the possession of the Home Recording Rights Coalition and the foreign manufacturers of DAT machines. Thus, we are unable to respond to this question.

Senator DECONCINI. Thank you.

Mr. Stebbings.

STATEMENT OF DAVID W. STEBBINGS, DIRECTOR OF RECORDING RESEARCH, CBS RECORDS TECHNOLOGY, MILFORD, CT, ACCOMPANIED BY LAWRENCE GARDNER, SENIOR ENGINEER

Mr. STEBBINGS. Good morning, Mr. Chairman and members of the subcommittees.

I'm David Stebbings, director of recording research at CBS Record Technology Center in Milford, CT. With me this morning is Lawrence Gardner, a senior engineer working on the project.

We welcome this opportunity to explain and demonstrate the CBS copy-code system in action. The copy-code system has two essential elements. The first is this electronic device, the copy-code encoder [indicating]. It is used in the recording studio to remove from a master recording a very narrow sliver of sound or notch. Even professional listeners cannot distinguish a coded recording from a recording which is not coded.

To demonstrate, let me play the same brief statement of a familiar Barbra Streisand song from the Broadway album from a compact digital audio disk or CD that has been coded and one from an uncoded CD. The lights will indicate which is being heard, and I invite you to try to identify which CD is which.

[Music is played by the witness.]

Mr. STEBBINGS. Even professional listeners, record producers, and studio engineers have not been able to reliably detect which CD was coded and which was not.

Larry, which light indicated the copy-coded disk?

Mr. GARDNER. The blue was coded.

Mr. STEBBINGS. I'm informed that the blue was coded. I'm afraid I couldn't tell from my position here.

Now the second element of the copy-code system is the copy-code scanner, an integrated circuit or chip which could be like this [indicating] and can be built into a DAT recorder. When someone attempts to tape a selection that has been coded, this chip scans the music looking for the encoded notch. When the notch is detected, the copy-code scanner inhibits the recording for a period of about 25 seconds. The cycle is then repeated continuously. The final tape made from a coded or uncopyable music selection will, thus, consist of portions of music interrupted by periods of silence.

This is a standard cassette tape recorder which is equipped with a scanner of the type I've just described [indicating]. It will allow normal taping of an album that is not protected with the copy-code notch. The scanner will simply scan the music, determine there is no notch, and permit copying.

When the music has been——

Senator LEAHY. You said it will scan?

Mr. STEBBINGS. The scanner will scan the music, determine that there is no notch present, and therefore permit a normal recording to occur.

Senator LEAHY. Thank you.

Mr. STEBBINGS. When the music has been encoded with the notch, however, as it scans it will detect the notch and the recording will be interrupted.

To demonstrate, we would insert a new cassette into this recorder and attempt to copy the coded CD that you just listened to, and we will make a tape recording just as though we would be at home.

We're playing the coded CD and you will be listening while the taping is going on to the source music. Then we will roll back the tape and show you what happens.

[Music is played during taping.]

Mr. STEBBINGS. OK, we'll roll back the tape now and play back and let you hear what happened.

[Music is played from recorded version.]

Mr. STEBBINGS. It kind of stops recording. [Laughter.]

The same thing would happen—excuse me?

Senator LEAHY. Just when it was getting good. [Laughter.]

Mr. STEBBINGS. The same thing would happen whenever an attempt is to copy music from an encoded source with a piece of equipment equipped with a scanner.

You've now seen basically the CBS system in action, and you see how simple the system is.

Representatives of the Japanese electronics industry recently tried in a demonstration before the USTR to show that the CBS copy-code system notch would have an unacceptable effect on sound quality. Since the hardware manufacturers have never been given any of the units we've built at CBS, it is apparent that they were demonstrating a unit that was built by them and is not one of our units.

Moreover, the engineers have made some errors in coding the demonstration tape which could easily be avoided with the CBS technology.

Finally, I would like to comment on the assertions of representatives of the hardware manufacturers and MITI that their own technological solutions will prevent digital-to-digital copying. First, there may now be a difference in the frequency sampling rates between CD players and DAT machines, but what's to assure that the difference will exist next week? Sharp and Hitachi have already shown machines with the same sampling rate as the CD, and converter boxes can easily harmonize the frequency sampling rates.

Second, the hardware manufacturers claim that digital flag codes will make digital-to-digital copying impossible, but the code is easily defeated in a number of ways which are explained in my written statement.

Third, and most importantly, these so-called protective alternatives do not address the problem of digital to analog to digital copying at all. All you need to do is to plug the CD player directly into the DAT using this standard connecting cable which costs about 75 cents [indicating cable].

In conclusion, the CBS copy-code scanner system works and is available now for implementation. The scanner will add virtually nothing to the cost of the DAT's large-scale integrated circuits. Equipment manufacturers are free to develop a compatible chip that can perform the same functions, maybe more efficiently or at a lower cost, and CBS has pledged to license both the encoder and copy-code scanner that it has developed on royalty-free basis for all hardware and software manufacturers.

I should also like to add that I had an opportunity last night to read Mr. Feldman's testimony in which he asserts deficiencies in our system. I don't have time to respond in detail, but suffice it to say that we're confident of our claims. We've offered to demonstrate our system to hardware manufacturers, but they have declined our offer. We'd be happy to submit our system to any independent testing facility for scientifically conducted audibility testing to verify our claims.

Thank you again very much for this opportunity, Messrs. Chairmen. I will be happy to answer any questions you may have.

[The following material was submitted for the record:]

TESTIMONY OF DAVID W. STEBBINGS
DIRECTOR OF RECORDING RESEARCH
CBS RECORDS TECHNOLOGY CENTER

Summary

The CBS copy-code system is a technology developed to protect copyright owners' rights in musical recordings. It was designed and developed by audio engineering experts at the CBS Records Technology Center and has two elements: the encoder and the copy-code scanner.

-- The encoder is a small electronic device that can "encode", in the recording studio, any master recording by removing a tiny sliver of sound from the music This notch is cut so as to fall between the fundamentals, overtones or harmonics of notes on the musical scale. It is effectively inaudible and does not affect the quality of the music.

-- The copy-code scanner is an integrated circuit or chip that is to be built into the recording mechanism of audio recorders. When the recording mechanism is switched on, this chip scans the music and periodically interrupts recording when it detects the notch. A copy taped from an "uncopiable" recording will thus consist of brief portions of music interrupted by periods of silence.

Representatives of the Japanese electronics industry recently tried to show that the CBS copy-code system notch would be audible and would have an unacceptable effect on sound quality. The encoded tape was produced, however, by some technology other than CBS's and did not portray the capabilities of the system. Moreover, in encoding their demonstration tape, the Japanese engineers cut the notch too wide and placed it so that it overlapped with audible sound.

The alternatives proposed by the Japanese electronics industry and the Japanese government to the copy-code system do not adequately respond to the copyright problems raised by DATs. They do not protect against digital cloning since technology already exists for overcoming the frequency sampling rate differential between CDs and DATs, and DATs that use the same sampling rate as CDs already exist. Moreover, the digital flag code is easily circumvented by anyone familiar with home computers. In addition, the proposed alternatives do not at all address digital-analog-digital copying, which produces copies of almost identical quality.

The copy-code scanner solution is presently available for implementation. The scanner chip is also inexpensive when produced in large volume for inclusion in DATs. The scanner is expected to add virtually nothing to the cost of producing the large scale integrated circuits that will go into the machines. Equipment manufacturers are free to develop a compatible chip that can perform the same functions more efficiently or at lower cost. In any event, CBS has pledged to license both the encoder and the copy-code scanner that it has developed on a royalty-free basis for all hardware and software manufacturers.

* * *

Good morning, Messrs. Chairmen, and Members of the Subcommittees. I am David W. Stebbings, Director of Recording Research, at the CBS Records Technology Center in Milford, CT. With me this morning is Lawrence E. Gardner, a senior engineer, working on the project. We welcome this opportunity to appear before you today to explain and demonstrate the CBS copy-code system.

The CBS Copy-Code System: Protection for Copyrighted Recordings

The copy-code system has two essential elements. It begins with this electronic device -- the encoder. It removes from a master recording a very narrow sliver of sound or notch -- at a frequency placed so as to fall between the fundamentals, overtones or harmonics of notes on the musical scale. The change caused by the encoding process is inaudible and does not affect the quality of the music. Listeners cannot distinguish an encoded recording from an unencoded recording. To demonstrate, let me play the same brief segment of a familiar Barbra Streisand song from "The Broadway Album" -- one from a compact digital audio disc or CD that has been encoded, and one from an unencoded CD -- and I invite you to try to identify which is which. Even professional listeners, record producers and studio engineers, have not been able to reliably detect which CD was encoded and which was not.

The second element of the copy-code system is the copy-code scanner, an integrated circuit or chip that is to be built into the recording mechanism of any kind of audio recorder. For example, it may be incorporated into one of the large scale integrated semiconductors or LSI, which are part of the Digital Audio Tape recorder or DAT machine. When someone attempts to tape a musical selection that has been encoded, this chip scans the music looking for the encoded "notch." When the notch is detected, the copy-code scanner inhibits the recording function of the machine for a period of about 25 seconds. The cycle is then repeated; if the scanner again determines that the notch is present, the recording function is interrupted for another 25 seconds. The final tape made from an encoded or "uncopiable" music selection will thus consist of portions of music interrupted by periods of silence.

This is a standard cassette tape recording machine which we have equipped with a scanner of the type I have just described. It will allow normal taping of any album that is not protected with the copy-code notch. The scanner will simply scan the music, determine that there is no notch, and permit copying.

When the music has been encoded with the notch, however, it will be detected and the recording will be interrupted. To demonstrate, we will insert a new premium, music-quality blank cassette into this recorder and attempt to copy the encoded CD you just listened to . . . .

Let us listen to what was taped on the machine . . . . You notice that the music was interrupted and the same thing will happen whenever an attempt is made to copy music from an encoded source on an audio recording device equipped with a scanner -- whether that encoded source be a record, a prerecorded tape, a compact disc, or a radio broadcast of any such protected source material. The concept of the copy-code notch can be extended to any audio recording device that may be developed in the future.

Of course, not every musical recording offered for sale need be encoded. Record producers may choose to sell unencoded versions that are therefore copiable. But for encoded recordings, the two elements of the copy-code system work together to protect copyrighted creations in a manner that does not audibly affect the quality of the playback.

The Recent Demonstration of an Encoded Tape at the U.S. Trade Representative's Office in No Way Portrayed the Capabilities of the CBS Copy-Code System

The copy-code system was designed by the engineers at the CBS Records Technology Center, and we have developed over the past 5 years very sophisticated units. As you have just seen and heard, our system works, although representatives of the Japanese electronics industry have gone to great lengths to try to show that it does not. Recently, I had an opportunity to witness a demonstration put on by engineers from two Japanese electronics manufacturers for the United States Trade Representative, in an effort to show that the notch included in musical recordings using the CBS copy-code system would be audible, and would have an unacceptable effect on the sound quality. Since the Japanese engineers have never been given any of the units we have built at CBS, it is apparent that they were demonstrating a system that they themselves had built -- not the CBS copy-code system. I am not sure whether to be disturbed or flattered by their attempts to emulate our technology. But the simple fact is that the flaws in their system prove nothing about how well our system works.

First, let me point out that whatever system the Japanese are demonstrating, it is not a true copy of the CBS system. We have yet to release our technical specifications for the encoder to anyone outside the music industry. Moreover, the Japanese engineers appear to have made some errors -- perhaps unintentionally -- in encoding the musical recording used for the demonstration. Without getting too technical, let me just state for the record that the encoding notch in the music was cut too wide -- far wider than is necessary for the copy-code scanner to recognize and react to the notch. And it was placed on musical notes that were part of the recording in a way that overlapped with audible sound. Suffice it to say that any competent audio engineer could easily avoid any of these obvious mistakes, at least with CBS technology.

I should also note that what the Japanese representatives were demonstrating for the U.S. Trade

Representative was only the function of the encoder device. That demonstration is not really responsive to the requirements that would be imposed by the legislation now before you -- which relates only to the other half of the CBS copy-code system -- the copy-code scanner chip, not the encoding device. In any event, as our demonstration here today has shown, a properly encoded musical recording, when played back, is indistinguishable from an unencoded version, and professional sound engineers throughout the studio industry have confirmed that this is true, by extensive listening trials held in their own studios.

The Japanese Electronics Industry's Proposals for Protecting Copyrighted Musical Recordings Do Not Work

In an apparent effort to fend off U.S. legislation, representatives of Japanese electronics companies and the Japanese Ministry of International Trade and Industry (MITI) have suggested that there is no reason for the music industry to be concerned about the impact of DAT because their machines will be configured so as to prevent digital-to-digital copying. I would like to comment on those assertions.

A. They Do Not Prevent Digital-To-Digital Taping

First, they claim that digital-to-digital copying will not be possible because DAT machines will record at a different "frequency sampling rate" than that at which CDs are played. This may be true for the moment. But the technology already exists for DAT machines which record at a frequency sampling rate identical to the rate at which CDs are played. In fact, the machines already exist: they have been shown as prototypes at recent audio fairs and consumer electronic shows by such major Japanese manufacturers as Sharp and Hitachi, among others.

Look at this from the perspective of the music industry, and the creators of copyrighted material. Who is to say that these Japanese manufacturers or others won't begin next week to market these machines? And even if they don't, what is to prevent the Korean electronics manufacturers from doing so? Or the Taiwanese?

Moreover, the technology also exists for the manufacture of "converter boxes" that can harmonize the frequency sampling rates of DATs and CDs. In fact, you can buy the chip necessary for such a converter box today, right out of the Sony catalog. It is obvious that the frequency sampling rate differential is small comfort to the copyright owners who are attempting to protect their works.

Second, the Japanese electronics industry's representatives have stated that digital "cloning" -- that is, digital-to-digital copying, such as from a CD directly to a DAT or from one DAT to another DAT -- will be impossible because of a digital flag code that accompanies the copyrighted musical recording. But the fact is that such a code is easily defeated in a number of ways. For example, anyone who is familiar with computers can write a simple computer program to "turn off" the flag code so that it will not inhibit recording. Easily enough, he or she could use that program in conjunction with inexpensive semiconductor chips to permit digital-to-digital recording. Alternatively, one could build or buy a "black box," probably for under $50, that would eliminate the flag code.

B. They Do Not Prevent Digital-Analog-Digital Copying, Which Produces Copies of Almost Identical Quality

The main point is that these so-called protective alternatives are designed to do but one thing -- prevent direct-input, digital-to-digital copying -- the kind of copying you would do by plugging a DAT directly into a CD player. Putting aside that these alternatives are so easily defeated they do not even effectively accomplish this limited objective, they still permit digital-analog-digital copying which just as surely, and just as completely, undercuts the copyright protection of the recording. All you need to do is plug the CD player either directly or via your stereo receiver into the DAT, using this standard connecting cable which costs about 75¢ . . . . The flag code cannot prevent this sort of copying.

The Japanese DAT manufacturers claim that digital-analog-digital copying would entail an unacceptable degradation in the quality of the recorded copy -- a loss of about 10 dB of signal-to-noise ratio compared to the original digital recording, and that this would deter would-be home tapers. Now, their 10 dB figure is rather high; engineering studies indicate a loss of only 3 dB. But even if the loss were as high as 10 dB, for most people the difference in sound quality between the copy and the original will be inaudible. The copy would still be of vastly improved quality over what is available through existing technology. With the highest fidelity analog recorder (equipped with the Dolby C noise reduction system), audiophiles can enjoy a signal-to-noise ratio of 75 dB. With a DAT machine, the signal-to-noise ratio can soar to 98 dB. Even after decoding and re-encoding the digital signal by running it through a stereo receiver, tapers will still enjoy a signal-to-noise ratio of 88 dB, which means that a digital-analog-digital copy will sound 4 to 5 times better than the best analog tape available. Moreover, that copy can then be used to produce digital clones, with zero loss of quality, when the home taper uses two DAT machines connected together.

The CBS Copy-Code System is Ready for Implementation, Will be Inexpensive, and is Available for Royalty-Free Licensing

The copy-coding technology that I have demonstrated and described here today is ready now for implementation. The encoding device you see here is ready for manufacture. The circuitry in the scanner we have here is presently being designed in semiconductor chip form, and prototypes will be available shortly for sampling to the industry and for mass production as a part of a large scale integrated circuit.

An important feature of our copy-code scanner is that it is inexpensive when produced in large volume for inclusion in DATs. The scanner is expected to add virtually nothing to the cost of producing the large scale integrated circuits that will go into the machines.

We are confident that the electronic circuitry we have developed is efficient, reliable and suitable for mass production for consumer products. However, if the Japanese manufacturers of audio recording devices believe that they can develop compatible circuitry that can perform the same functions more efficiently or at lower cost, they should be free to do so. That is why the proposed legislation prescribes only the functional requirements of a copy-code scanner, and not the specific engineering solution that CBS has developed. In any event, in recognition of the important benefits this system will provide to all copyright beneficiaries, we at CBS have pledged to license both the encoder and the scanner that we have developed on a royalty-free basis for all hardware and software manufacturers.

Thank you again, Messrs. Chairmen, for the opportunity to testify. I shall be happy to answer any questions you may have.

Answers to Questions Posed by Senator DeConcini to David Stebbings

Questions for Mr. Stebbings

1. You have stated that CBS plans to offer its encoding and scanning technology to other companies on a royalty-free basis. You also commented on a demonstration by the Japanese that involved an inferior technology, which may prove to be cheaper than that developed by CBS. What is to prevent a less sophisticated technology from supplanting your system and making DAT a less attractive product?

There is no danger of this happening because electronic equipment makers would have no incentive to use an inferior technology in machines they actually hope to sell. The system they have demonstrated is not inferior because it is cheaper. It is inferior because they have designed it that way as a lobbying strategy, for the purpose of attempting to create the false impression that the copy code system hurts sound quality. With the legislation passed that motive would disappear.

It should be kept in mind that the equipment manufacturers would be required to install only scanners which would not affect the quality of the DAT machine itself or the recorded music. Our opponents have demonstrated on several occasions their version of the encoding technology (but not the scanner technology), attempting to demonstrate that the "notch" that results from encoding is audible when the recorded music is played back. We have criticized these demonstrations because they do not represent what the CBS encoder does.

(If the proposed legislation is enacted, CBS will make both the encoding and the scanner technology available through royalty-free licensing agreements to all interested parties. Licensees will not have to pay CBS anything for the use of the technology. We should add that it has always been our position that any licensee who can make a system that meets the performance requirements set forth in the bill and is lower in cost than the CBS system should be free to do so.)

2. How hard would it be for the electronic hobbyist to bypass the chip? How hard for a professional?

Operationally, it would be very difficult for either an electronic hobbyist or a professional to bypass the copy-code scanner chip.

First, it is important to note that the copy-code scanner chip would not be placed in the machine as a single isolated component. It would be part of a large-scale integrated (LSI) circuit. Removing the LSI circuit would affect the DAT machine in numerous ways, the most important of which is that it would completely disable the recording mechanism. Thus, it is not just a question of removing the LSI; one would also have to be prepared to replace the LSI with circuitry that would enable the DAT machine to perform all of the functions that had been controlled by the removed LSI except for scanning for the encoded notch. It seems unlikely that a hobbyist or a professional would be willing to dismantle a $1300 machine and risk not being able to reassemble it.

Second, mechanically, removal and replacement of an LSI is no simple project. It must be removed and replaced with soldering equipment heated and held at exactly the right temperature, with precisely the right solder flow. In the manufacturer's factory, these operations are accomplished by precision machinery. They would be very difficult for an individual to replicate by hand.

Of course, "professionals" who are intent on bypassing the copy-code scanner chip may be willing to go to considerable expense to accomplish their goal, especially if there is the possibility of commercial remuneration for their efforts. The proposed legislation makes it illegal, however, for anyone to provide, in commerce, a service for the purpose of bypassing or disabling copy-code scanner chips.

3. Doesn't the statement that the record companies may supply unencoded copiable prerecorded DAT cassettes, undermine the argument that DAT will facilitate commercial piracy?

This question is outside the technical realm, with which I am most familiar, so I have referred your question to Mr. Berman, President of the Recording Industry Association of America, and will defer to his answer.

Questions for Mr. Stebbings and Mr. Feldman

1. In his testimony, Mr. Berman says that "because there doesn't yet exist a technology for the high-speed duplication of pre-recorded DAT cassettes, we cannot sell our music in the DAT format." Mr. Ferris, however, says in his testimony, "machines for the manufacture of pre-recorded DAT tapes have been developed and will be available." Could the two of you clarify the contradiction of these two statements?

To our knowledge, the only duplication technology that presently exists for DAT cassettes involves real time systems. That is, the presently existing systems require 45 minutes to copy a 45-minute prerecorded cassette. Obviously, this is not economical for the mass production of prerecorded DAT cassettes on the scale of operations familiar to the major record labels.

There has been talk in the industry that at least one Japanese electronics manufacturer is developing a high-speed duplication system. That company, Sony, has refused to demonstrate its system to the American recording industry. Indeed, even the information on this system that Mr. Ferris touts in his testimony before the Subcommittee on Communications of the Senate Committee on Commerce, Science, and Transportation is prominently marked "preliminary information." If Mr. Ferris means to suggest that these machines are "developed" and "available," this is difficult to reconcile with the fact that the manufacturer's literature is clearly marked "preliminary" and that the manufacturer has refused to share with its potential customers even a demonstration of the technology.

Further, it is our understanding that this "preliminary" equipment requires a clean room environment. Not only is a clean room environment very costly in terms of fixed capital, but it requires a plant operation totally alien to that which is currently used to produce analog audio cassettes -- hence, higher labor costs. We understand, also, that DuPont deNemours and Company also is in the process of developing a high speed DAT duplicating system, but the DuPont equipment may be in an even earlier development stage than is the "preliminary" Sony system.

Senator DECONCINI. Thank you, Mr. Stebbings.

Before we go to the other panel members, I want to let our colleagues here enter any opening statements. We'll all refrain from questions so we can hear the panels.

I'll first yield to Congressman Coble from North Carolina. Do you have any opening statement, Congressman?

Mr. COBLE. Thank you, Mr. Chairman. I have no opening statement.

Senator DECONCINI. Congressman Cardin, do you have an opening statement?

Mr. CARDIN. No opening statement.

Senator DECONCINI. Senator Hatch of Utah, do you have any opening statement?

Senator HATCH. I do, Mr. Chairman, but I think what I'm going to do is just put it in the record. I'm more interested in hearing what they have to say.

There is a lot of interest in this area. I want to compliment both you and our House colleagues here, Mr. Kastenmeier in particular, for your interest in this area. It's a very, very interesting area.

Senator DECONCINI. Thank you. Your statement will appear in the record at the beginning of the hearing.

Mr. COBLE. Mr. Chairman, I would, with your permission, like to present Congressman Moorhead's opening statement.

Senator DECONCINI. Thank you very much. Without objection, Congressman Moorhead's statement will appear in the beginning of the record.

We will now hear from Mr. Ferris, representing the recording industry.

Mr. Ferris, please proceed.

STATEMENT OF CHARLES D. FERRIS, ESQ., LAW FIRM OF MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, WASHINGTON, DC, REPRESENTING THE HOME RECORDING RIGHTS COALITION

Mr. **Ferris**. Mr. Chairman, we have over here on the table to the left the long-awaited DAT recording machine which has been the subject of a great deal of speculation. Today we're going to have an opportunity to see it and to hear it, and if the committee is agreeable, Mr. Chairman, Mr. Len Feldman who is here with me, and is the owner of Feldman Laboratories and one of the Nation's foremost commentators on audio technology, will go first and describe the DAT machinery and its capacities and demonstrate to the committee really how it fits into the whole framework.

Senator **DeConcini**. Please proceed, Mr. Feldman.

STATEMENT OF LEONARD FELDMAN, L. FELDMAN ELECTRONIC LABORATORIES, GREAT NECK, NY

Mr. **Feldman**. Thank you, Mr. Ferris.

Mr. Chairman and members of the subcommittee, my name is Leonard Feldman. I've been involved in the audio-video industries for more than 30 years, both as an engineer and as a product evaluator and technical journalist. My experience and additional credentials are detailed in my written statement.

My message today is very simple: digital audio tape recorders, or DAT's, are a step forward in technology. The CBS anti-copy chip is a step backward in my view. I will also demonstrate that the encoding system chosen by my friends at CBS does, in fact, distort any music in which it is inserted.

Now the DAT specifications, the standardized specifications that resulted from an open international conference of more than 80 companies, took into consideration the question of digital-to-digital copying. By digital-to-digital copying, we mean hooking up the electronic digital pulses directly from a compact disk player or from one DAT machine to another so as to make an electronic copy that is, indeed, a perfect clone of the original.

There are two protective measures built into the system that would already prevent such copying. One is a special digital code that tells the DAT recorder that the program material is copy-protected. Unlike the system described, however, that digital code in no way affects the music, the musical content. It's unrelated to it.

The other involves the use of different digital sampling rates in compact disks and in DAT machines. Without belaboring these technical details, let me now demonstrate.

First, we will attempt to make a digital-to-digital recording of a compact disk mounted in the lower machine there onto the DAT recorder above. If you'll start the demonstration—he's placing the DAT tape into the DAT recorder, pressing the button in an attempt—pressing both buttons starting the CD player and starting the DAT recorder.

Now it's probably difficult for you to see it, but there is a flashing light there that is indicating that it will not record under these circumstances, because up until now all the CD recordings made thus far have this copy-inhibit flag in the digital domain, so they cannot be copied onto DAT in the digital-to-digital format.

Now the next thing I'd like to do is to try the same thing with two DAT machines, if I may. There you see two DAT machines. The upper one is going to have some prerecorded material playing. Now here what we've done is we've deliberately played one selection or recorded one selection in advance that does not have that copy flag code that would inhibit the digital-to-digital recording.

If you gentlemen and ladies will just watch the meters on both machines as they begin to operate, you will note that during the first few seconds both machines will be indicating that something is happening. In other words, the lower machine will be recording what's played on the upper machine.

You can start that.

You notice both machines indicate that their meters are doing something. You see the moving bars there on both units, meaning that a recording is successfully taking place.

[Music is played and recorded.]

Mr. FELDMAN. As we finish this selection, however, we come to another one in which that digital copy flag, which appears thousands of times per second, will inhibit the ability of the lower machine to record what's in the upper machine.

[Music is played and attempted to be recorded.]

Mr. FELDMAN. Again, you see a flashing light on the lower machine that says "copy protect, copy protect, cannot record."

In other words, what I am saying is that what protection that is needed is already there, and it's not, as my colleague suggested, easily defeated. There are, indeed, machines that can convert from one sampling rate to another, as has been suggested. Currently, you can buy one for about $10,000. I don't think the typical consumer is going to do that in order to be able to make digital-to-digital recordings.

Nor is it a simple matter to reverse that copy flag or that copy-inhibit code that's in the digital domain. It would take a rather sophisticated graduate of MIT to do that, and a good deal of money. It is not a buy-it-in-the-store kit that would convert or eliminate that copy-code flag.

In summary, then, what the DAT does do is make high-quality analog recordings through its analog inputs of a quality comparable to the best analog decks currently available, which is quite good, indeed, but hardly a clone. If you want a digital master quality, you have to go out and buy a prerecorded digital tape. These will be so superior to the prerecorded analog tapes available now that personally I can hardly wait to buy some.

Now let's take a closer look at the CBS system. First, CBS has maintained that the frequencies involved in its filtering process are above the range of fundamental tones of musical instruments. Now, as you probably know, human beings hear frequencies ranging from a low bass tone of about 20 hertz or vibrations per second to a top frequency of 20,000 hertz. That's the range of human hearing.

As you might note from the upper diagram there, the notch that CBS proposes to insert is not a tiny sliver of sound, as they have indicated. It's, rather, close to the important middle of the audio range where much musical content is present.

To make this point more forcefully, consider the next diagram where I've shown a regular piano keyboard. The proposed notch will have a direct effect upon the highest A sharp and B natural keys of a standard keyboard, and of any other instrument incidentally. I'm just using the keyboard for the illustration.

Worse still, it will affect all of the other notes which I have shown in cross-hatch pattern. That's because a piano or any musical instrument produces not only its fundamental notes, but overtones or harmonics of those fundamentals. It is that quality that helps us distinguish between a piano and a violin, between a trumpet or a clarinet. Take away some of those overtones and you corrupt the sound of the instruments and voices.

Now under certain conditions, ladies and gentlemen, it's interesting that the missing frequencies upon which the CBS depends might even occur with program material that has not been encoded. It is conceivable that your child playing a violin or practicing and trying to record it could suddenly have the recorder shut down as well if certain conditions are met that fulfill the needs of that notch.

Now I'd like to demonstrate, if I may, just two examples of how the presence of the CBS notch filter in any program material could alter the sound of that program material. In each test you will hear non-encoded signals first followed by a simulation of the anticopy chip encoded signal. Each pair of signals will be repeated twice.

Now first, rather than play a complex piece of music that's been electronically enhanced and phase altered, and Lord knows what else, to confuse the issue, I'm going to play a pure tone, just a single tone, swept through the notch frequencies, rising in pitch and then descending. Remember, the first sound is not encoded while the second sound you hear will be encoded.

If you would, please.

[High-pitched sound.]

Mr. **Feldman**. Please pay attention to that meter up there as well. Notice the consistency of the sound. It remains level.

Now we'll play the encoded version.

[High-pitched sound.]

Mr. **Feldman**. I'm sure you all heard the disappearing sounds there twice, but let's repeat it just for clarity. We're going to do it once more.

The first sequence, remember, is not encoded.

Senator **Leahy**. Just in case you have a slow panel. [Laughter.]

Mr. **Feldman**. Well, this room is not acoustically ideal for this demonstration, as I'm sure you realize, Senator.

The first sequence, then, will not be encoded; the second sequence encoded—a repeat of what you just heard for clarification.

[High-pitched sound.]

Mr. **Feldman**. Constant tone unencoded.

And now the encoded version with the notch.

[High-pitched sound.]

Mr. **Feldman**. Thank you.

Next let's listen to several notes played on an actual piano. No encoding was used during the first playing. The second time you hear the four notes the signal has been passed through this filter. Please listen very carefully to the second and fourth notes during each playing.

Notice how in the second playing the second and fourth notes sound blunted and dull compared with the clear, bell-like sound during the first playing—only on the second and fourth notes of this sequence.

[Piano notes played.]

Mr. **FELDMAN**. And now encoded.

[Piano notes played.]

Mr. **FELDMAN**. Let's do that one more time for the audience: first, the sequence not encoded; the second time, the sequence encoded.

[Piano notes played.]

Mr. **FELDMAN**. Thank you.

Before I turn it back to Mr. Ferris, I just would like to make one brief comment. That is, if indeed this embodiment of the notch effect was not correctly employed, then I would suggest that those of us who followed material written in technical papers by CBS perhaps didn't know how to follow it or perhaps the information given in those technical papers some two years ago was inaccurate, but I can assure you that these effects you heard were very similar to what will occur if the right music is selected for the demonstration.

Thank you, and now I'd like to turn it back to Mr. Ferris.

[The following material was submitted for the record:]

STATEMENT OF LEONARD FELDMAN

Owner, Leonard Feldman Electronic Laboratories

Mr. Chairmen and members of the subcommittees, my name is Leonard Feldman. I have been involved in the audio and video industries for more than 30 years, both as an engineer and as a product evaluator and technical journalist. I have written 7 books on audio subjects and currently I am senior editor of Audio magazine and technical editor of Video Review. I serve as a representative from the United States to one of the technical committees dealing with audio standards of the International Electrotechnical Commission ("IEC"), a world standards body. I am a member of the Institute of Electrical and Electronic Engineers ("IEEE") as well as of the Audio Engineering Society ("AES"). I own my own laboratory and consulting firm. And for 7 years I have been a consultant to the Consumer Electronics Group of the Electronic Industries Association.

My message today is simple. Digital audio tape recorders, or DATs, are a step forward in technology. The CBS anti-copy chip is a step backward. I will explain what the DAT does do, what it does not do, and why. And, I will demonstrate that the encoding system chosen by my friends at CBS does, indeed, distort any music in which it is inserted.

What the DAT Does and Doesn't Do

The DAT is an important evolutionary advance in home recording technology. It combines the recording technique perfected in the VCR -- recording heads mounted on a rotating drum, with the tape moving past at an angle -- with the digital electronics used in compact disc players as illustrated in this diagram. In fact, for several years, you and I have been able to make digital home recordings, by buying something known as a digital audio processor, and hooking it up to any VCR. You can do this today, for about half of what a DAT is expected to cost. But you would be lacking the convenience, compactness, and ease of operation that the new format will offer. Here is a DAT tape. See how much more compact it is than a standard analog cassette or a Beta or VHS video tape.

DATs Will Not Make Digital-to-Digital Copies of Prerecorded Music

The DAT specifications that resulted from an open international conference took into consideration the question of digital-to-digital copying.

By digital-to-digital copying we mean hooking up the electronic pulses directly, without converting back to analog music frequencies, so as to make an electronic copy that is a perfect clone of the input. The DAT system provides for a "flag" or digital code to be placed in the digital data to indicate to any digital recorder that digital-to-digital recording should not be allowed. This special digital code, if included in a CD recording or on a future DAT prerecorded tape, can be set so that digital-to-digital is not possible.

The DAT conference required DATs to read and respond to this code. When a DAT reads this code, which is there thousands of times a second, it stops recording. Unlike the proposed CBS anti-taping chip system, however, this does not interfere with the DAT's ability to record the same material after it has been converted to analog form and reconverted to digital. This type of recording, which is not all that different from what consumers have been able to do for their own use with ordinary cassette tape recorders that have been around for nearly 20 years, would result in a recording that is three times (10DB) noisier than the original.* The result is still a very good recording -- slightly better than you can do with some of the best consumer analog audio recording systems available today -- but by no stretch of the imagination a "perfect master" or "digital clone."

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* Theoretically, this digital-to-analog-to-digital conversion could be done with a loss of only 3 DB, but as a practical matter, the foreseeable state of the art in digital-to-analog and analog-to-digital converters is such that the loss must be about 10 DB. The decibel (DB) scale is logarithmic; a gain of 3 DB means a doubling in power.

This digital copy prevention code is already on most of the digital masters from which compact discs now on the market have been made. As it is not part of the music, it has no effect on quality. A second copy-prevention method incorporated in the DAT standard is the use of a different digital sampling rate -- 48KHz -- than the 44.1 KHz rate used in recording CDs. (The "digital sampling rate" is the number of times per second the frequency curves are measured, or sampled, when they are converted into digitized pulses.)

The DAT is unable to record at the 44.1 KHz rate. So digital-to-digital recording from CDs is prevented by both a belt -- the digital copy inhibit code -- and suspenders -- the different CD sampling rate. Moreover, most CD players on the market don't even have digital outputs.

In summary, what the DAT does is make high quality recordings through its analog inputs, of quality comparable to the best analog decks presently available -- which is quite good, indeed. But if you want digital master quality, you have to buy a prerecorded digital tape. These will be so superior to the prerecorded analog tapes available now that, personally speaking, I can hardly wait.

The CBS Copy-Code System Is A Severe Step Backward in Audio Technology.

The CBS "anti-copying" chip represents a reversal in the long-term trend of improving the sound quality of home music reproduction systems. Most obviously, it prevents any type of copy from being made from any encoded source. Therefore, if the CBS encoding scheme were applied to a vinyl recording of a 1938 Caruso performance (as I expect it would be), it could not be copied on a DAT, for playback on a DAT car stereo.

Aside from this intended effect on home taping, research has revealed that the very encoding used by the CBS system, because it is in the form of a notch cut out of the music, distorts the playback of any recording so encoded. Thus, even if I never want a DAT or even a CD, and I want to stick to playing back high quality vinyl records, the CBS encoding will make these records sound appreciably worse when I play them back. The same degrading effect would be present if this system were applied to video sound tracks, or to broadcast sound transmitted over the airwaves.

Frequencies on the Piano Keyboard Are Filtered Out by the CBS Encoding

Let us take a closer look at the CBS system. CBS has maintained that the frequencies involved in its filtering process are "above the range of fundamental tones of musical instruments." Figures 1 and 2, clearly refute that statement. The upper diagram of Figure 1 shows the frequency range that would be affected by the introduction of the notch filter. The filter affects frequencies from 3715 HZ to 3965 HZ, while the frequency of greatest attenuation occurs at 3840 HZ. Figure 2 relates this notch frequency range to a piano keyboard. It is clear that the presence of a CBS frequency "notch" will have a direct effect upon the highest A-sharp and B-natural keys of a standard 88-key piano, for example, since these notes have fundamental frequencies of 3720 HZ and 3951 HZ respectively.

It is less obvious that many other notes of the piano (or any other musical instrument that is rich in harmonics) would also suffer. The lower portion of this diagram (Figure 2) shows the relative effect upon these lower tones. For example, the A-sharp and B-natural notes a full octave below the ones most affected will also undergo serious degradation. Although their fundamental tones will not be attenuated, the harmonic content of these lower notes falls right in the region of the "notch" and will therefore be severely attenuated. A piano, like most musical instruments, produces sounds that are rich in harmonic content. Remove the harmonics and you remove the qualities which make a piano sound like a piano, a violin sound like a violin, etc. As the lower diagram (Fig. 2) shows, overall sonic content of other notes on the keyboard will also be affected by the introduction of the notch filter, though to a lesser degree.

In addition to the alteration of the harmonic content of notes recorded in the presence of such a notch filter, several other harmful effects on program sources will occur.

Severe Phase Distortion

Refer once more to Figure 1. The lower diagram shows that extreme phase (or time-relationship) distortion occurs at or near the center frequency of the notch. Many audio critics condemned early Compact Disc players because they exhibited a slight phase error at the extreme high frequency end of the audio band. Objections were so great over this phase shift problem that most makers of CD players now employ new circuit techniques to overcome that phase distortion. Yet, here is a proposal for a filter that would put much more severe phase distortion right smack near the middle of the audio spectrum.

The Chip System Could Turn Off Recordings of Unencoded Material.

Under certain conditions, the frequency notch upon which the CBS system depends might occur even with program material that has not been encoded. What the CBS chip looks for is 2 conditions: An absence of signal content in its narrow band of frequencies that have been filtered out, and the presence of signals in frequencies on either side of the notch, as illustrated in this diagram (Figure 3). That additional "search" is needed so that the "chip" won't shut down a recorder if you happen to record something that has no musical content at the frequency of the notch.

Now, consider these next illustrations (Fig. 4). A violin's output waveform is very similar to that of a sawtooth wave. That type of waveform contains a fundamental tone and many harmonics above that fundamental. Suppose a note having a pitch somewhat lower than 1/6th that of the "notch" frequency were produced by a violin. The sixth and seventh harmonics of that note would fall on either side of the notch frequency, meeting both conditions for recorder shutdown. The anti-taping encoding example is shown in the lower half of the diagram (Fig. 4). A clarinet produces a waveform very similar to a square wave. A square wave produces a fundamental frequency plus all the odd harmonics, (3rd, 5th, etc.) of that frequency. Again, there is absence of signal content only at the notch frequency and presence of signal content in the region above the notch. Again, the recorder would shut down -- unintentionally. While the statistical chances of such an improper shutdown are small, they are nevertheless quite possible.

How the CBS Notch Filter Distorts the Music

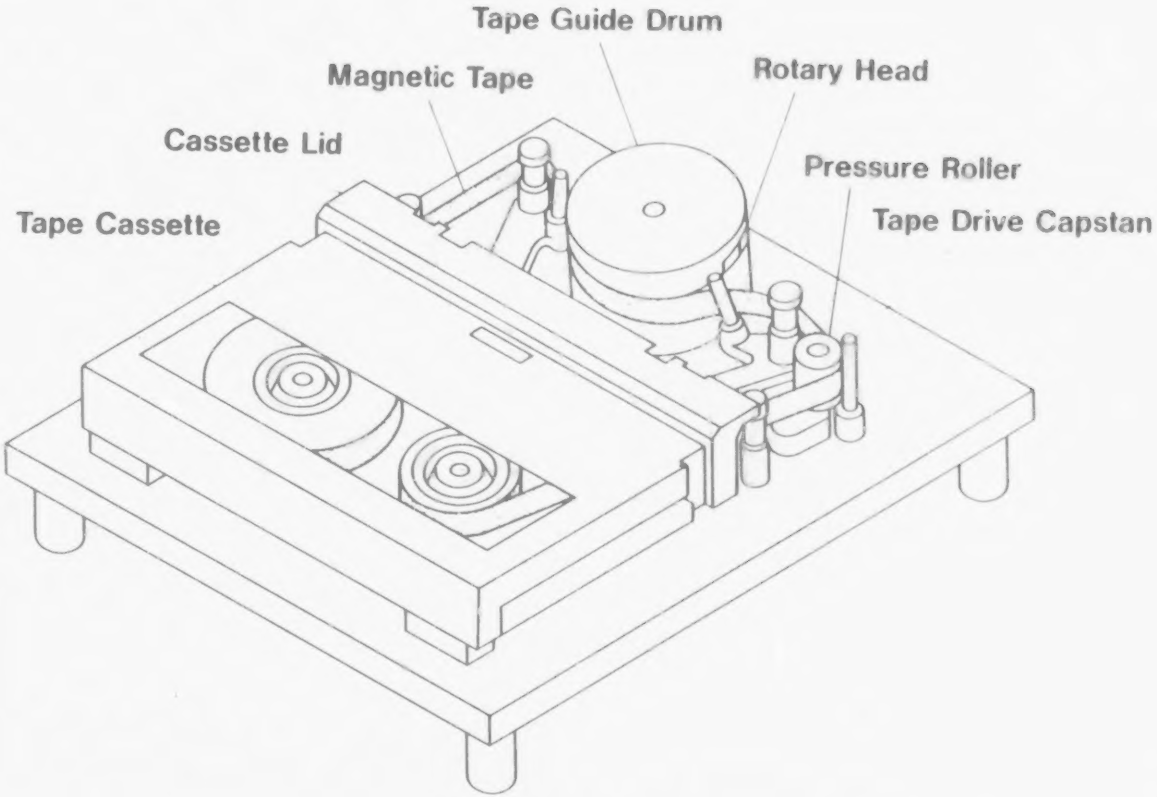
At this time, with your kind permission, I should like to demonstrate just a few sound examples of how the presence of "notch" filter in program content could alter the sound of that program material. (Demonstrations)

Any number of similar demonstrations could be performed to illustrate the corruption of sound quality introduced by such frequency elimination within an important part of the audio spectrum. I should like to quote, if I may, from comments written by a well known British technology expert, Mr. Barry Fox. Mr. Fox's comments were quoted in a recent issue of Television Digest, a highly respected industry newsletter. Writing in the BBC's publication, "The Listener," Mr. Fox said that the anti-copy chip "may end up not only stopping home taping but deterring people from buying any records at all. Performing musicians, recording engineers, record producers, hi-fi journalists or record reviewers" haven't been given the opportunity to listen to anti-copy encoded discs.

Mr. Fox quotes BBC engineers as being "very apprehensive." Recording company engineers, says Mr. Fox, "dare not voice their reservations publicly." However, one test run by a group of engineers at one company duplicated the CBS system. "Expert ears heard [distortion] at once," says Fox, quoting one group: "It was most noticeable on strings and female voice on classical music; there is a subtle rounding of sound, with a muddying of the stereo image." Mr. Fox concludes by quoting one engineer: "I am all for stopping people copying our records, but I don't want them mucking around with the sound to do it."

I don't share that engineer's position on consumer home taping, but I thoroughly agree that technology should be used to take a step forward, not backward, in sound reproduction.

Thank you for giving me the opportunity to appear today. I would be pleased to answer any questions.



Schematic Diagram of R-DAT

EFFECT OF THE ANTI-COPY CHIP ENCODER
Upon tonal content of music and upon stereo imaging and accuracy.

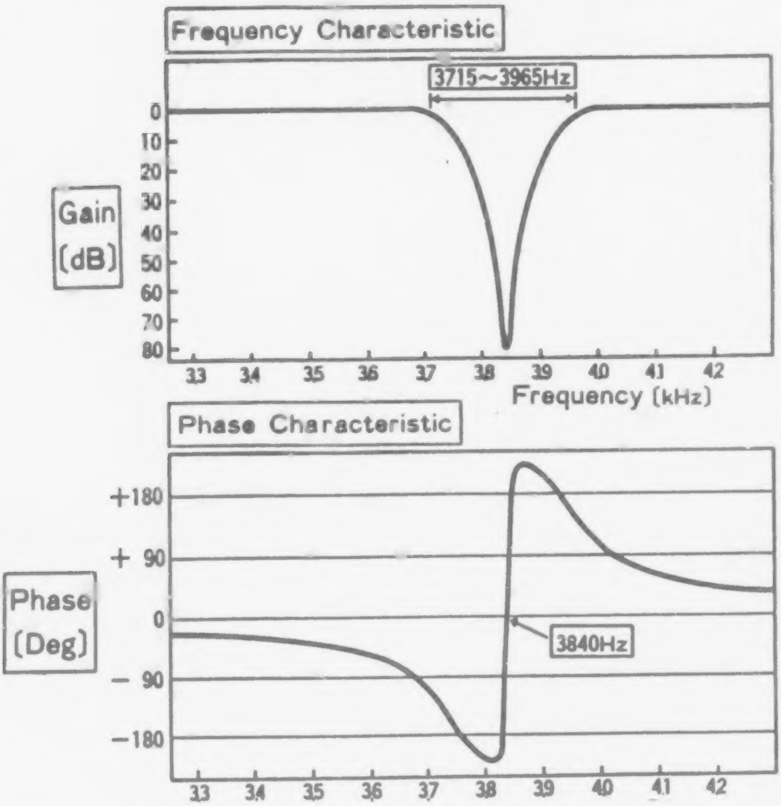


FIGURE 1

THE ANTI-COPY "NOTCH"

Eliminates Musical Notes
Alters Musical Instrument Sounds

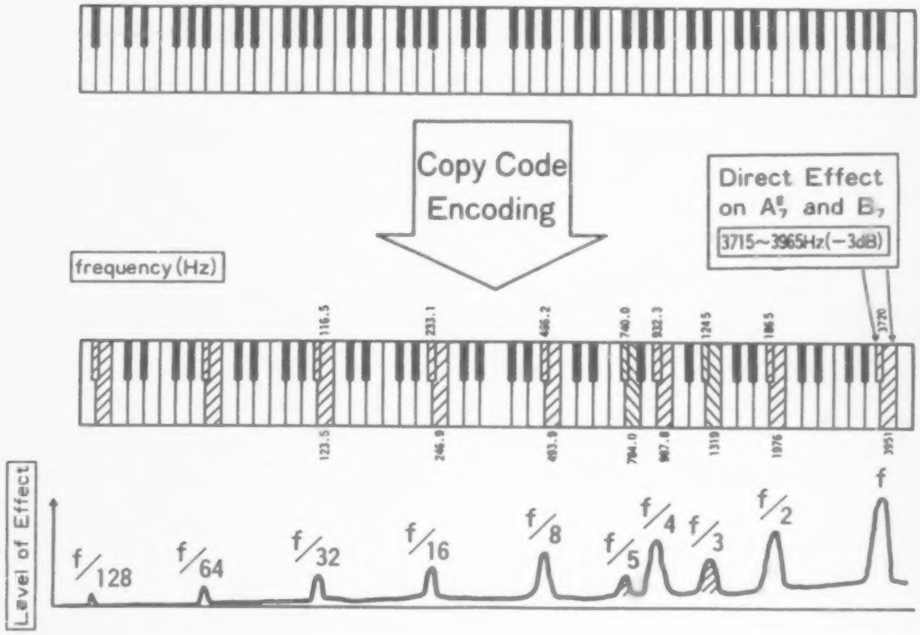
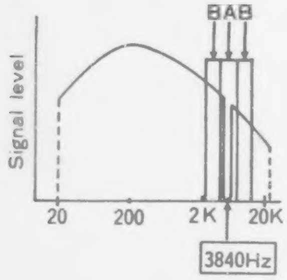


FIG. 2

THE ANTI-COPY CHIP CAN "MAKE MISTAKES"

It might disable recorders even when "unprotected music" is being recorded!



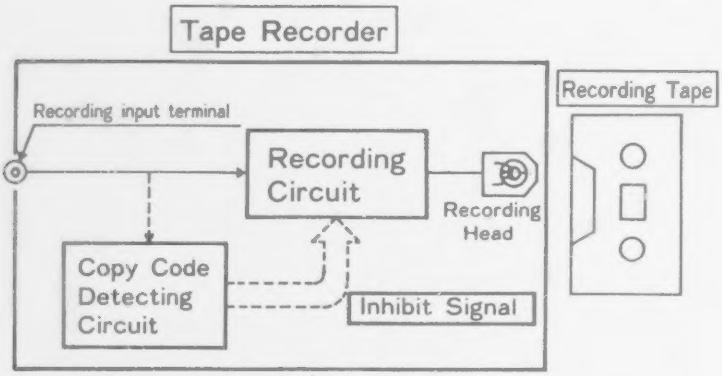


Figure 3.

Operation of Copy Code Detecting Circuit

	Signal level ⇨		Judgement ⇨	Recording
	A	B		
Case 1	None	None	No Signal	Continued
Case 2	Exist	Exist	Normal Audio Signal	Continued
Case 3	None	Exist	Copy Coded Audio Signal	Stop

UNRELIABILITY OF THE ANTI-COPY CHIP

Ordinary instruments, such as a violin, clarinet, can "confuse" the chip!

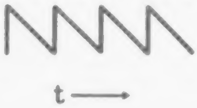
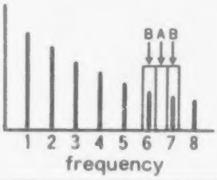
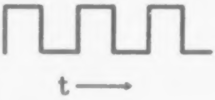
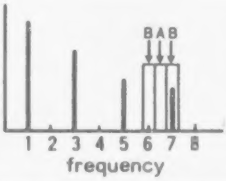
	Wave form	Spectrums
Violin Strings	saw-teeth wave 	
Clarinet Wind insrument	square wave 	

Figure 4

THE BOTTOM LINE

**The Anti-Copy Chip will set
high fidelity back several years!**

High Fidelity + Chip =

Inaccurate Music Reproduction

United States Senate
COMMITTEE ON THE JUDICIARY
WASHINGTON, DC 20510-6275

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April 23, 1987

Mr. Leonard Feldman
L. Feldman Electronic Laboratories
97 Oxford Boulevard
Great Neck, New York 11023

Dear Mr. Feldman:

Thank you very much for taking the time out of your busy schedule to testify at the Digital Audio Tape hearing held by the Senate Subcommittee on Patents, Copyrights and Trademarks and the House Subcommittee on Courts, Civil Liberties and the Administration of Justice.

We know that all of the members of the Subcommittees are very appreciative of having the benefit of your views. Your statement will be extremely valuable as we consider this issue in the months ahead.

By now, you should have received a copy of your transcript which will be placed in the record. Prior to printing the final transcript of the hearings, we offer you this opportunity to make any necessary corrections. Do not hesitate to include any additional related materials, if it would be beneficial to our hearing record, the general public and Congress.

We are also enclosing some supplemental questions for inclusion in the record. We would appreciate your written response within two weeks.

Again thank you for your participation in the hearing. We look forward to working with you in the future.

Sincerely,

Dennis De Concini

Robert Kastenmeier
Chairman
Subcommittee on Courts,
Civil Liberties and the
Administration of Justice

Dennis DeConcini
Chairman
Subcommittee on Patents,
Copyrights and Trademarks

DDC/ebk
Enclosure

Senator DeConcini

Questions for Mr. Stebbings and Mr. Feldman

1. In his testimony, Mr. Berman says that "because there doesn't yet exist a technology for the high-speed duplication of pre-recorded DAT cassettes, we cannot sell our music in the DAT format." Mr. Ferris, however, says in his testimony, "machines for the manufacture of pre-recorded DAT tapes have been developed and will be available." Could the two of you clarify the contradiction of these two statements?

Questions for Mr. Feldman

1. Will there be a DAT that records from digital to digital? How soon?

2. Is there a diminution of sound quality in taping digital to analog?

3. If a converter were added to a DAT to allow taping digital to digital, would the result be "perfect" copies or would the result be of lesser quality than the original? Why?

Questions for Mr. Feldman and Mr. Ferris

1. I understand that early prototypes of DAT allowed digital to digital taping? Have the Japanese government and the manufacturers taken any action concerning DAT?

a) Is it appropriate for consumers to be deprived of the best technology available because of decisions by the Japanese government and/or the electronics industry?

b) If the Japanese government and the electronics industry have recognized the threat to the recording industry by deciding not to market DAT with digital to digital copying capability, why won't they go a little further and protect copyright by accepting the copy-code scanner?

* * *

SENATOR HATCH

QUESTIONS FOR PANEL 1 (INCLUDING BOTH SIDES OF ISSUE)

1. IN THE 1984 BETAMAX CASE, THE SUPREME COURT SANCTIONED THE TIME-SHIFTING PURPOSE OF VIDEO HOME TAPING AS A FAIR USE, EVEN THOUGH REPRODUCTION OF AN ENTIRE WORK GENERALLY WOULD NOT WARRANT A FAIR USE EXEMPTION. IN WHAT WAYS MIGHT DAT TAPING BE

DISTINGUISHED FROM THE BETAMAX HOLDING? WHY SHOULD DAT TAPING NOT BE CONSIDERED COVERED BY THE BETAMAX RULING?

2. SECTION 107 OF THE COPYRIGHT ACT SPECIFIES CERTAIN KINDS OF COPYING THAT ARE CONSIDERED FAIR USES. FOR EXAMPLE, MAKING COPIES FOR CLASSROOM USE BY A TEACHER OR FOR NEWS REPORTING BY A REPORTER OR FOR OTHER SCHOLARLY AND RESEARCH PURPOSES IS NOT AN INFRINGEMENT OF COPYRIGHT. WOULD INSERTION OF A COPY-CODE SCANNER MAKE IT IMPOSSIBLE FOR INDIVIDUALS TO COPY FOR ONE OF THESE PERMISSIBLE USES UNDER CURRENT COPYRIGHT?

3. I WOULD LIKE TO FOLLOW UP ON THIS POINT TO SOME DEGREE. CONGRESS HAS SPECIFICALLY INCLUDED IN OUR COPYRIGHT SYSTEM A FAIR USE DOCTRINE FOR SOME IMPORTANT REASONS. ESSENTIALLY CONGRESS WANTED TO PERMIT AND ENCOURAGE COPYING OF PORTIONS OF WORKS FOR SCHOLARLY OR EDUCATIONAL REASONS. HOW COULD THE TECHNOLOGICAL SOLUTION ACCOMODATE THESE PURPOSES FOR THE FAIR USE DOCTRINE?

4. I WOULD LIKE TO ADDRESS TO THE OPPONENTS OF LEGISLATION TO IMPLEMENT A TECHNOLOGICAL SOLUTION THE FOLLOWING QUESTION: YOU HAVE NOTED THAT THE COPY-CODE SCANNER INTERFERES WITH THE MUSIC RECORDING PROCESS. RATHER THAN DAMAGE THE RECORDING CAPABILITIES OF YOUR DAT MACHINES, WOULD YOU PREFER A MODEST ROYALTY ON THOSE DEVICES TO PROTECT THE PURPOSES OF COPYRIGHT LAW?

5. TO THE PROPONENTS I ADDRESS A SIMILAR QUESTION: WOULD YOU BE SATISFIED WITH A MODEST ROYALTY ON DAT RECORDING DEVICES INSTEAD OF A TECHNOLOGICAL ALTERATION?

6. HOW SOON WILL DAT RECORDERS APPEAR ON THE AMERICAN MARKET? WHAT AFFECT WILL THIS HAVE UPON THE MARKET FOR AUDIO RECORDING MACHINES?

LEONARD FELDMAN
Electronic Laboratories
97 OXFORD BOULEVARD
GREAT NECK, N.Y. 11023
(516) 482-5629

May 11, 1987

Hon. Dennis DeConcini, Chairman
Committee on The Judiciary
United States Senate
Washington, DC 20510-6275

Dear Senator DeConcini:

Thank you for your letter of April 23, 1987 concerning my testimony offered at the Digital Audio Tape Hearing held by the Senate Subcommittee on Patents, Copyrights and Trademarks and the House Subcommittee on Courts, Civil Liberties and the Administration of Justice. Unfortunately, your letter only reached me on May 9. I hope that the following replies to your questions and those of Senator Orrin G. Hatch can still be considered as part of the record.

Reply to Question 1 directed by you to Mr. Stebbings and myself:

Enclosed is a copy of a photograph of equipment that is already available for the real-time duplication of pre-recorded DAT cassettes. While this equipment requires the use of a master player and any number of "slave" units, it is not unlike the system that has been used for many years for the successful commercial duplication of video tapes. Producers of pre-recorded VCR programs have not regarded this technique as any impediment to the successful distribution of their products.

Beyond that, there is every indication that within one year's time, high-speed contact-printing duplicators of DAT cassettes will be available. These would permit commercial duplication of DAT pre-recorded material by software producers at extremely low cost -- lower by far than the present cost of a Compact Disc or even, perhaps, below the cost of currently available analog pre-recorded audio cassettes.

Reply to questions directed by you specifically to myself:

1. I presume that you are asking whether, in the future, the current dual inhibition against digital to digital recording is likely to be abandoned. I do not believe that this will occur at any time in the foreseeable future. My reason is this: whenever a world standard is set for a product or technology, the successful marketing of that product and its acceptance by the general public depends upon *everyone* following that standard. It is such standardization that has resulted in the success of the compact disc and, indeed, of the analog audio cassette with which we are all familiar. It is the *lack* of such standardization that has impeded the progress of stereo broadcasting on A.M. radio as well as the failure of four-channel sound, both of which technologies could not settle on a single standard. If DAT is to succeed, all manufacturers involved in its development and production will have to adhere to standards set by

the 80 companies who developed the system, and those standards include the double inhibition against digital-to-digital taping.

2. There is a diminution in sound quality in taping via the digital-to-analog route. The degree of diminution is variable, depending upon the skills of the recordist, but we estimate it to be an increase in background noise level of between 8 and 10 decibels, which is certainly significant.

3. At present, no converter that I know of could be added to a DAT recorder to enable digital-to-digital recording. You will recall that even if a sampling rate converter were added to a DAT machine (to convert from the Compact Disc sampling rate of 44,100 Hertz to the DAT rate of 48,000 Hertz) at a cost of $10,000 or more, there would still be the matter of the digital data "flag code" which additionally prevents digital-to-digital taping.

With respect to the questions that you directed to Mr. Ferris and myself, I defer to Mr. Ferris, as I believe that those questions are outside my area of expertise.

The questions posed by Senator Hatch, included in your letter to me, were in fact directed at Panel 1 participants and would therefore best be answered by Mr. Charles Ferris rather than by myself. Again, they involve areas other than the purely technical ones that I addressed in my testimony.

Thank you very much for allowing me to add these comments to the record in this matter.

Very truly yours,

Leonard Feldman

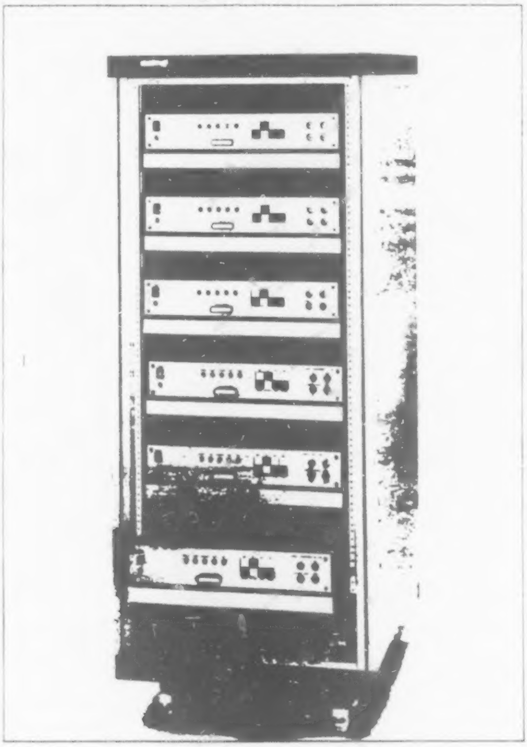
Leonard Feldman

Encl: Photocopy of brochure of SONY DAT Duplicator.

SONY

Preliminary Information

Professional Digital Audio Duplicator



Sony has developed a digital system capable of digital duplication of DAT tapes. Capable of digital dubbing with master/slave connections, it can dub several tapes simultaneously with synchronized operation by maintaining a standard tape speed.

(Over, please)

The reproduced signal of the master machine is corrected by a signal processing circuit. Thus the signal is completely dubbed by slave machines without any degradation.

It is absolutely necessary to transfer not only the music signals but also the sub-code information, which is a feature of the digitally dubbed DAT tapes, so that the slave machines will be perfectly synchronized with the master machine.

Both the servo sections and signal processing sections can be synchronized in the system, so that it can parallely transfer the external sync signals, 128 × fs signals, and the LR, word, and bit clock signals.

As the system has a daisy chain connection capability and all of the slave machines have receiver and driver circuits, it can equally transfer the above mentioned signals to all slave machines.

Both the master machine and the slave machines have the same construction. Any of the system machines can be set to the master or slave mode by manipulating the master/slave switches on the rear panel.

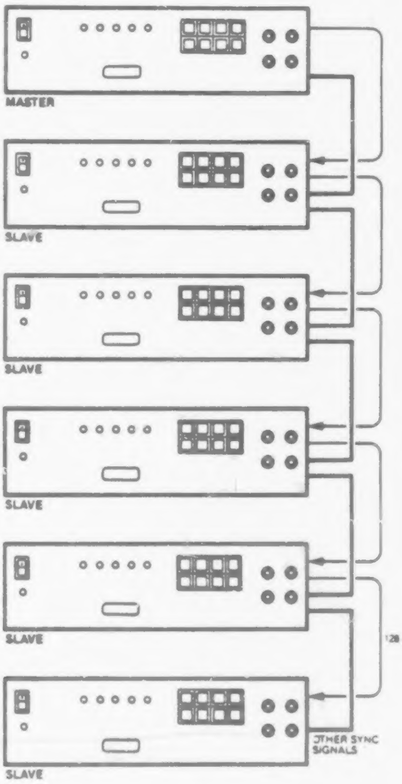
Slave machine operations, such as REWIND, RECORD-FORWARD-PAUSE (Stand-by mode), and PAUSE OFF, can be executed from the operation keys of the master machine, so there is no need for a system controller.

Specifications

Recording format	R-DAT format (2 ch stereo)
Tape	Metal powder
Tape speed	8.15mm/sec
Tape speed deviation	±0.5%
Sampling frequency	44.1, 48KHz (sampling frequencies for the slave machines are automatically locked onto the master machines)
Motor	Capstan Brushless D.D. motor × 1 Drum Brushless D.D. motor × 1 Reel Brushless D.D. motor × 2 Control DC motor
Transferred data	PCM data PCM ID Sub code data Sub code ID
Input	BNC, D-sub 25P
Output	BNC, D-sub 25P
Current consumption	AC 100V, 25 W
Dimensions	427(W) × 85(H) × 340(D)mm (16 7/8 × 3 3/8 × 13 3/8 ")
Weight	7 kg (Approx. 15 lb 9 oz)

Design and specifications subject to change without notice.

1 TO 5 COPY DUPLICATION SYSTEM



(Over, please)

A-0562
MK1058MP86(1P1.003

Sony Corporation
Printed in Japan © SONY

Mr. **Ferris**. Thank you, Len.

Mr. Chairman and members of the committee, I think the demonstration——

Senator **DeConcini**. Mr. Ferris, excuse me. The members of the Senate are going to have to go vote. We're going to continue with the hearings and Representative Kastenmeier will proceed with questions after that. We will be back in about 10 minutes.

Senator **Leahy**. We just didn't want you to think it was in anticipation of your testimony that somebody saw us leave.

Mr. **Ferris**. I'll give it again when you return. [Laughter.]

Senator **Leahy**. Especially someone like yourself who is so well respected by the Senate and understands how the Senate works, you know what the five bells are.

Mr. **Ferris**. Yes,

Senator **Leahy**. Thank you, Charlie.

Mr. **Ferris**. What we have just seen makes clear that you cannot make a digital copy of a digital source of music. I think, secondly, it demonstrates that the CBS copy scanner degrades the audio signal, and I think from my standpoint one of the most significant aspects as I look over at the DAT machines is that I noticed—and I hope all of you noticed— that it didn't explode; it didn't pollute. It really presents no danger to the health and safety of the American public that would justify its banning from the American market.

Over there the DAT machine is simply the next generation of extraordinary audio equipment that I'm sure will be as enthusiastically received by the American consuming public as its predecessors which have provided the means by which the recording industry has been able to grow and exceed their highest profits ever in each of the past 3 years.

There should be a sense of deja vous to the members of these committees who have heard variations of the home taping debate over the past 5 years. Is it legal or is it not?

The last revolutionary consumer recorder, the VCR, was also subject to attempts to ban it before it could gain a foothold in the American market. How strained and remote do those original objections seem now? The fact is that that new recording products become established in this market because of their recording capability but wind up creating greater markets than prerecorded material. What 5 years ago was described as the ultimate threat to the viability of the motion picture industry now provides a $5 billion revenue stream to those studios, exceeding even the theatrical exhibition.

The DAT, like the VCR, like the compact disk, will provide new and obviously unexpected revenues streams to the recording companies, hardware manufacturers, retailers, and others. The DAT is just another great piece of recording-playback equipment that the American consumer should not be deprived of.

So what is so unique about the DAT that deserves special legislative treatment, that singles it out for banishment? What if television had been banned to protect the motion picture industry's then distribution system or if cable was banned to protect the programming rights of broadcastings? What if the Walkman were banned to protect the distribution of vinyl disks, and what if VCR's had been banned to protect existing motion picture distribution mechanisms? Each of these revolutionary methods of providing software have become the dominant revenue stream of the copyright holders. Nothing about the DAT merits special treatment.

The DAT is a better tape recorder, but consumers will not use it any differently from the way they use their recorders today—to tape music they have purchased for their personal enjoyment.

As my friend, Len Feldman, has explained, the DAT, like other recorders, cannot make master quality recordings of prerecorded music. All it can do is record such music through its analog input. It makes a very good recording, but a recording that is nothing like a digital clone.

Let me emphasize to my friend Jay Berman that home taping is legal and always has been. It was these committees that wrote the language of legality in the 1971 legislative history accompanying the Sound Recording Act. No lawsuit has ever been brought claiming that audio home taping by consumers is illegal. The gist of my presentation today and that of Mr. Feldman is that there is no reason at all to treat the DAT any differently than other home taping devices.

Congress should not lose sight of the fundamental truth about home taping: whether it involves a boom box, a Nakamichi or a DAT, most home taping of prerecorded music is of selections from albums that the taper already owns and is for strictly personal and private use. From this fundamental truth, it should be obvious that the recording industry's analyses which are used to show that home taping causes a net displacement of sales of prerecorded music must be suspect. The one $1.5 billion loss of sales estimate bandied about by the recording industry is without credibility for a number of reasons, including one: it greatly distorts the amount of home taping of prerecorded music.

For example, it assumes the amount of taping of prerecorded music is about three times the actual gross amount of blank tapes sold, which is an impossibility. It ignores the business, educational, and other nonprerecorded music uses of blank tape, which are about 52 percent of the uses of blank tape.

Three, they inappropriately assume that a personally customized selection of music is a substitute for, and therefore a loss sale of, prerecorded tapes.

Four, it essentially ignores the taping of music off the radio which the 1971 act specifically addressed.

Finally, it ignores the synergistic and stimulative effect of home taping. All of the studies and the records before these committees over the years have shown that consumers who tape selections of artists are much more likely to purchase prerecorded tapes of those artists.

A calculation that took into account all these realities would show that the $1.5 billion number is meaningless.

Magnetic tape has become a part of a system of portable and automotive players centered around the home tape recorder. This system exists only because home recorders exist. It is virtually undeniable that the Walkman, the car stereo, and the home tape deck itself have combined to greatly enhance the demand for prerecorded music. If all of these tape recorders and the tape players they have spawned could be collected from consumers and dropped into

Lake Mead or Lake Superior, would the recording industry really be better off?

Before voting on any anti-DAT legislation, the Congress should carefully look at several points, many of which were addressed by Chairman Kastenmeier in his opening remarks today. Why are the major record labels apparently boycotting the prerecorded DAT format? Is their true intention to kill the format for competitive, commercial reasons? Can and will record companies keep their promises to issue a separate inventory of unencoded, copyable recordings? If they will, what is the price differential between the unencoded and the encoded products? Does the gap bear any conceivable relationship to the commercial privacy as the recording industry claims?

Let us also clear up any disinformation that this is a trade issue. It is no such thing. The recording industry's attempt to move into that jetstream where their hope is that the merits of the DAT would be overwhelmed and overlooked should be exposed. If this hardware were manufactured in the Midwest, would the recording industry stop complaining and go back to their business? No, because their concerns are not trade related but copyright, and are really centered on challenging the delicate balance between the proprietary and consumer rights defined in the copyright law.

Let us also move beyond the self-demeaning characterization of overseas manufacturing giants parasitically sucking away profits from the sweat and labor of struggling artists. The audio business is a two-way street and no participant, from artist to recording company to hardware manufacture to retailer, has a monopoly on creativity and adding value.

Without playback and recording technology that meets modern American consumer needs and interests, even the best music would not move beyond the music sheet, just as without the great gifts of the American artist this exciting new hardware would seem in many cases to be only steel, lights, and buttons.

Let me be perfectly clear, Mr. Chairman—if the anti-DAT legislation before these subcommittees is enacted, you will kill a new technology in its cradle. We believe there is no reason to stop, limit, or restrictively define technology and even less justification and no precedent for the Federal Government in doing so for reasons other than health and safety.

This is a ban since those that manufacture the DAT know that if legislation impairs the ability to record on a DAT, there will be no market for the DAT equipment that does less than the existing, less expensive equipment.

No matter how you package the bill, the anti-DAT provision is a direct attack on all home taping. We urge you to examine this subject very thoroughly and in detail. As you do, the anti-DAT legislation will become even less defensible and more outrageous as a public policy option.

Thank you, Mr. Chairman.

[The following material was submitted for the record:]

STATEMENT OF CHARLES D. FERRIS
for the
HOME RECORDING RIGHTS COALITION

Mr. Chairmen and members of the subcommittees, my name is Charles D. Ferris. I am an attorney in Washington, D.C. with the firm of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. On behalf of the Home Recording Rights Coalition ("HRRC") I thank you for inviting me to testify today.*/

The HRRC was formed in October, 1981, immediately after the decision of the U.S. Court of Appeals for the Ninth Circuit in the so-called "Betamax" case. That decision, for the first time in our history, threatened to ban and withhold from the public a new consumer product on grounds that had nothing to do with public safety or welfare. Our broadly based coalition was formed to counsel against such a result. Fortunately for everyone, including the movie industry, the effort to ban the VCR failed in the Supreme Court, and efforts to ban, tax or cripple the VCR have consistently been rejected by the

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*/ The Home Recording Rights Coalition includes companies that are involved in the manufacture, sale, and distribution of audio cassette recorders and audio tape, and related equipment. They include Alpine Electronics Corporation of America; Ampex Corporation; BASF Systems Corporation; Curtis Mathes; Fuji Photo Film USA, Inc.; General Electric Company; Hitachi Sales Corporation of America; International Jensen Inc.; JBL Incorporated; JVC Company of America; Kenwood Electronics; Matsushita Electric Corporation of America; Maxell Corporation of America; N.A.P. Consumer Electronics Corporation; NEC Home Electronics (U.S.A.) Inc.; Sears, Roebuck & Co.; Sanyo Manufacturing Corporation; Sony Corporation of America; Sansui Electronics Corporation; Tandy Corporation; TDK Electronics Corporation; 3-M Company; TEAC Corporation of America; Toshiba America, Inc.; Yamaha Electronics Corporation; Zenith Electronics Corporation.

Membership includes many prominent trade associations and consumer groups, such as the American Council of the Blind; the Association of General Merchandising Chains; the Car Audio Specialists Association; the Consumer Recording Rights Committee; the Electronic Industries Association; the International Society of Certified Electronic Technicians; the National Association of Retail Dealers of America; the National Retail Merchants Association; the National Association of Television and Electronics Services of America; the National Electronic Sales and Services Dealers Association.

Congress. Today we are here to speak up for another promising new consumer product that is also threatened with banishment.

The Home Recording Rights Coalition, since 1981, has been a broadly based group of companies, organizations, and people. Over the past five years, here are just some of the people who have testified for the Home and Audio Recording Rights Coalitions: John Roach, Chairman and President of Tandy Corp.; Jack Battaglia, General Manager, Memtek Products (makers of Memorex brand tape); Jack Wayman, Senior Vice President, Electronic Industries Assoc.; Fr. Robert McEwen, Chairman, Consumer Recording Rights Committee; Oral Miller, President, American Council of the Blind; Jim Ritchey, songwriter and musician, Greensborough, North Carolina; Scott Graves, audio retailer, Woodstock, Vermont. In opposing various measures that would have banned, taxed, or crippled new consumer recording products, these witnesses have had a common theme: consumers have, and deserve, the right to purchase new consumer home recorders.

Summary of My Testimony

The essence of my testimony today is that the legislation that seeks to ban the DAT from the American Market constitutes an indictment, trial and death sentence of a creative and promising product that is not even available to consumers yet. The basic issue of private home taping, by consumers, is being ripped from its status as a very important part of the American consumer-driven home music market and a very valuable and thoughtfully articulated copyright balance between consumers and recording companies.

There is no reason, or justification, for putting the DAT or the consumer on trial, especially with banishment as the remedy. The last revolutionary consumer recorder, the VCR, also was subject to attempts to ban it before it could gain a foothold. Look at how strained and remote the original objections to the VCR seem now. The fact is that new recording products become established because of their recording capabilities, but wind up establishing even greater markets for new prerecorded material.

The purported reasons for indicting the DAT, and home taping, simply don't stand up to scrutiny. The DAT does not raise any new or different home taping issues; it does not allow "perfect digital clones" to be made. Home taping itself does not cause the sort of sales displacement that the recording industry claims; on balance it may even be beneficial. And it is the recording industry's own efficiency, and supply constraints caused by unexpectedly high demand for compact discs, that have held down the level of the industry's new releases. In fact, the major record companies are setting new records for sales and profitability.

Congress should look a lot more closely at the particulars of the campaign against the DAT. It should examine the apparent boycott, by record companies, of releases in the DAT format. It should explore whether record companies can and will issue, even at higher prices, versions of new records, tapes, and discs that lack the CBS copy coding, in addition to the encoded versions. And the Congress should explore and understand the poverty of the efforts that have been made to confuse private, consumer home taping with the altogether different subject of commercial piracy.

Congress should also ponder carefully the implications of mandating a particular technological limitation, unrelated to safety or welfare, for new consumer products. Indeed, the emerging evidence of the distortive effects of the encoding system that would be mandated by this legislation should be seen as an early and bad omen for this sort of approach.

The DAT and the Consumer, on Trial

Mr. Chairmen, the legislation introduced to ban DAT from the American market constitutes a trial of DAT with a mandatory death sentence. Here today, to confront the witnesses against it, is a new consumer product -- the Digital Audio Tape recorder, or DAT. Also on trial is the American consumer. The question you must decide is: Is this combination, the American consumer and the DAT, so dangerous to themselves or others that they must be kept apart by the force of law?

The American consumer has supported both the hardware manufacturers and the recording industry magnificently. In return, consumers have received, for their private, noncommercial use, the benefits of continued advances in technology. There is no reason to choose the door of the DAT as the place to stop, limit, or define technology. This sort of legislation is extraordinarily dangerous, both for its own effects and as precedent. It should raise some fundamental concerns.

Why Pick on DAT?

First, why single out the DAT? What if television had been banned, on the basis that TV sets were not yet on the market? Nothing about the DAT merits such treatment. The DAT is a better tape recorder, but consumers will not use it any differently from the way they use their recorders today -- to tape music they have purchased for their personal enjoyment. The recording industry should be made to demonstrate precisely why the DAT should be treated in isolation from the rest of the debate over home taping. They cannot do this now because no DAT recorders are as yet available to the public. Once DATs are available, the present objections will, in retrospect, look insubstantial.

Advancing Technology: Thumbs Up or Thumbs Down?

The DAT doesn't pollute and it doesn't explode. We will demonstrate what it does do, by playing some of the excellent prerecorded music that has already been prepared in this format. [Demonstration]

You have just heard the sound of advancing technology. The DAT uses the basic recording method of a VCR and the basic electronics of a compact disc ("CD") player to play digital tapes that are the sonic equal of CDs. If you decide thumbs up, these recorders and tapes will be available to the public. Thumbs down, they probably won't be.

Why Recorders Must Record

Fish gotta' swim, birds gotta' fly, and recorders gotta' record. The anti-taping chip required by the legislation before your Subcommittees would effectively kill the DAT as a new format. Take the case of the only other new product to go on trial for its life, the VCR. When the VCR was first offered, at prices exceeding $1,000 (the same range in which DATs would be first offered), would anyone have bought it if it lacked the ability to record? Indeed, take the standard analog cassette, which is now the recording industry's major prerecorded product. Would anyone have bought home tape decks if they lacked the ability to record?

Common sense, and consumer surveys, teach us that consumers buy new types of recorders to have the freedom and flexibility to make their own tapes, but they use them primarily to play prerecorded tapes. The reason is that movie studios and recording companies are much more efficient in packaging and distributing movies and music than consumers, themselves, will ever be. Of course people make a great number of recordings at home, too. With VCRs, they are primarily for "time shifting" of broadcasts. With audio recorders, recordings are primarily to edit, preserve, and make portable the music the home taper has already bought.

Today, Hollywood admits that the VCR is a friend. Because of the VCR, there is a $5 billion market in prerecorded video cassettes. And while movie attendance is rising, the boxoffice has been surpassed by home video as the movie industry's primary source of revenue. The VCR has more than justified its acquittal.

Why Is the DAT on Trial?

In light of the favorable experience with the VCR and other new consumer recording products, why is the DAT in the dock today? It faces three charges, none of which stands up to scrutiny. Charge (1) is that the DAT is somehow different from other recorders when it comes to consumer home taping practices. Charge (2) is that consumer home taping itself should be limited, because allegedly it costs the recording industry $1.5 billion per year in displaced sales. Charge (3) is that home taping has caused the recording industry's new releases to decline 43% since the peak year of 1978.

The DAT Will Not Be Used Differently From Existing Recorders.

Charge (1) is simply untrue. DAT recorders will not be used differently from other recorders; they will principally be used for playback and for some home taping. The proponents of anti-DAT legislation have the burden of proving the contrary, that owners of DAT recorders will abuse their right to tape, or engage in commercial piracy. As my learned friend Len Feldman will explain, however, the DAT, like other recorders, cannot make "master quality" recordings of prerecorded music. All it can do is record such music through its analog input, to make a very good recording, but a recording that is nothing like a "digital clone."

There is no reason whatsoever for the Congress to assume that DAT recorders are somehow illegitimate. As you are aware, under both the 1971 legislative history accompanying the Sound Recording Act and case law, private, consumer home taping is legal. No lawsuit has ever been brought claiming that audio home taping, by consumers, is illegal. The gist of my presentation today, and that of Mr. Feldman, is that there is no reason at all to treat the DAT any differently from other home taping devices.

Home Taping Does Not Have the Sales Displacement Effects Claimed by the RIAA.

Congress should not lose sight of the fundamental truth about home taping, whether it involves a boom-box, a Nakamichi, or a DAT -- most home taping of prerecorded music is of selections from albums that the taper already owns. From this fundamental truth, it should be obvious that the RIAA's analyses, which are used to show that home taping causes a net displacement of sales of prerecorded music, must be suspect. They are, in fact, both dubious and inconsistent.

The claimed $1.5 billion loss each year due to home taping comes from a study by Dr. Alan Greenspan conducted in 1982 which is based on faulty premises, employs unsatisfactory methodology, and fails to account for the tremendous economic benefits that taping technology has delivered to the recording industry. The inadequacies are too many to repeat in full here,* but let me list a couple of critical problems with the Greenspan analysis.

First, relying on a study done by Warner Records in 1982, Greenspan assumes that 75% of the total blank tapes sold in the U.S. were used to tape copyrighted music. Not only does the Warner survey grossly exaggerate the amount of home taping which involves copyrighted music (the Yankelovich survey** found that less than half of all home taping involved copyrighted music); it also (by looking only at households) completely ignores the vast amount of blank tape sales to institutional purchasers such as government, business, industry, colleges and schools. To assume that 75% of blank tape sold is used for home taping is absurd on its face.

Second, Greenspan uses a 42.6 multiplier to determine how many of those blank tapes containing music actually displaced purchases of records. Again this number is based on a survey done by the recording industry and was created by posing hypothetical questions to home tapers about purchasing behavior. This kind of hypothetical question is useless for determining displaced sales for several reasons. First, because most taping is of selections, there is no way the taper could have bought an album comparable to what he or she taped. Second, the taper often answers that he "would have purchased the album" because, in fact, he already has. Third, people will more willingly spend hypothetical dollars than real ones. Again, the critical figure relied upon by Greenspan is completely unreliable.

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* For example, ever since 1982, the recording industry's coalition has cited the work of Dr. Greenspan and others to prove that home recording pushes the price of prerecorded records and tapes up. On the very same occasions, Dr. Greenspan himself has testified that home recording pushes the price of prerecorded records and tapes down. See also Nina W. Cornell, "Critique of 'Home Taping in America: 1983, Extent and Impact,' " Hearings on S. 31 Before Subcomm. on Patents, Copyrights and Trademarks, 98th Cong., 1st Sess. 419 - 435 (October 25, 1983); letter to Hon. Charles McC. Mathias, December 2, 1983.

** Why Americans Tape, survey by Yankelovich, Skelly & White for Audio Recording Rights Coalition, 1982.

At bottom, Greenspan's analysis is so far off base that the $1.5 billion figure might as well have been pulled out of air. When one adds the greatest omission -- the failure to account for the benefits of the recording technologies -- the $1.5 billion could as well reflect gains, rather than losses, from home taping. As Tom G. Palmer observed in the March 24 Wall Street Journal, magnetic tape has become part of a system of portable and automotive players, centered around the home tape recorder. This system exists only because home recorders exist.* It is virtually undeniable that the Walkman, the car stereo, and the home tape deck itself have combined to greatly enhance the demand for prerecorded music. If all of these tape recorders, and the tape players they have spawned, could be collected from consumers and dropped in Lake Mead, would the recording industry really be better off?

Home Taping Has Not Caused the Decline in New Releases.

The third charge is that home taping, by supposedly displacing record sales, has caused industry new releases to decline 43% since the peak year of 1978. But in its trade press, the industry has acknowledged, time and again, the real reasons new releases are down: in 1978 the industry was flamboyant, short-sighted, and totally unprepared for the down cycle that (like many other industries) it experienced from 1980 through 1982.

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* As Tower Records founder Russ Solomon put it, "[I]f you didn't have the home recording business, you wouldn't have Walkman machines. In other words, the tape technology that came out of the recording machine resulted in the portable playback machine and the automobile machine, which created an emormous market for us." M. Goldberg, "The Wisdom of Solomon," Rolling Stone, Nov. 22, 1984 at 39.

The Recording Industry Is Enjoying New Efficiency and Record Profitability

One finds a guide to the true state of the recording industry in the current (March 28) issue of Billboard. On the page (p. 3) on which one headline says, "House Subcommittee OKs DAT Copy-Code Provisions," another headline says: "Polygram's Acts Bring in Banner Year; Global Profits Soar to $120 Million in '86." The article says 1986 was "the best-ever 12-month period in the company's history," and that Polygram has joined WEA and CBS in having annual grosses over $1 billion and profits over $100 million. It then quotes London-based Polygram senior executive vice president Leonard Fine as to why his company is so profitable:

> Ever since the days of our discussions with WEA [a merger blocked by U.S. antitrust authorities], we've been going through a major restructuring process. ... We've lowered our break-evens and substantially reduced our whole infrastructure cost.
>
> We're leaner, better-staffed, and better-managed. All our operations in 27 countries have been trimmed down to size so as to work more effectively ....

Mr. Fine said that the 1986 results are "a sustainable profit; it's not just a flash in the pan."

I have also attached to my statement an article detailing the extraordinary results that have been achieved by the CBS and WCI (Warner) record groups in 1986. The Billboard article refers to the 1986 CBS results as "the highest revenues and income [ever] generated by a record company," and says that Warner's three domestic labels "set a new collective sales record." In citing these results, we are by no means implying that record companies are too rich to be allowed to petition the

Congress. What we are suggesting is that the very factors cited by the recording industry as indicating problems due to home taping reflect, in reality, efficiencies that have carried the major labels to new levels of profitability.

New Release Are Constrained by the Shortage of CD Stamping Capacity.

In addition to the record industry's new self-discipline, the other major factor affecting new releases has been the shortage of compact disc stamping capacity. Ever since this format was introduced by the same companies that manufacture tape recorders, the recording industry has consistently underestimated the demand for it. New stamping plants, most of them built by hardware manufacturers rather than record companies, have been unable to catch up with demand. Accordingly, recording industry executives have used the available capacity to issue major releases, rather than using the same, limited capacity to issue a greater number of more minor releases. In other words, the recording industry's decline in new releases since the peak in 1978 is much more a matter of supply considerations than of demand.

The Facts About A Prerecorded Tape Boycott, Dual Inventories, and Commercial Piracy Should be Fully Developed

Before voting on the anti-DAT legislation, the Congress should look carefully at several points. Why are major record labels apparently boycotting the prerecorded DAT format? Is their true intention to kill the format for competitive, commercial reasons? Can and will record companies keep their promises to issue a separate inventory of unencoded, copyable recordings? Does the DAT bear any conceivable relationship to commercial piracy, as the recording industry claims?

The Apparent Boycott of Prerecorded DAT Releases

It is ironic that we're beginning to hear objections to the

DAT on the basis that insufficient provision has been made for production of prerecorded DAT cassettes. This is the old story of shooting your parents and applying for relief as an orphan. The DAT was designed, from the beginning, as a format emphasizing prerecorded music; machines for the manufacture of prerecorded DAT tapes have been developed and will be available. It has been executives of some of the major record companies who have said they would never license their titles for release as prerecorded DAT tapes.

One such executive, in a public speech (a copy is being submitted along with this testimony), referred to fears that the industry "wall" in this respect might be breached, and admonished another major company for signing a distribution agreement (not including DAT) with a smaller company that had announced it intended to issue albums in the DAT format. Attached to my statement today are reports from the trade press suggesting that such a boycott is under way, indeed, with the assistance of at least one major retailing chain.

I am sure you will agree that the Congress of the United States should not be a vehicle for helping major record labels avoid competition from smaller labels. In a sense, the avoidance of such competition is what this legislation is principally about.

Are Record Companies Sincere About Offering Encoded and Unencoded Inventories? Will Encoded Discs Be So Labeled?

The recording industry has suggested, but not promised, that record labels might issue a separate inventory of unencoded recordings, at a higher price, to give people the "privilege" of taping their own records. When this idea was first publicly explained to leading record retailers, in the speech to which I have just alluded, many of them reacted with shock and horror. (Articles quoting their reactions are attached to this statement.) A separate inventory of every record, tape, disc, and prerecorded DAT tape appears unsustainable -- there might be tw~~o versi~~ons of each Bruce Springsteen album, but only at the expense of carrying *any* version of a more minor artist's release. In my judgment, record retailers simply do not believe that the industry will issue dual inventories of more than a few releases, and I think they are correct. Moreover, given the criticism that is now emerging of the effects of the CBS encoding, is it even clear that the industry will label or reveal which albums it has encoded?

Piracy Is Simply Irrelevant to DAT

The other notion that the recording industry has floated is that the DAT somehow will make commercial piracy more of a problem than it is today, and that the CBS chip somehow would curtail piracy. This is ridiculous on its face. Piracy is the unauthorized copying of works and their subsequent commercial sale in competition with the original. It is already, and should be, a criminal offense. Once a consumer, knowingly or unknowingly, buys a pirated tape, all he needs to to is play it back. He doesn't need a recorder of any sort. Pirated tapes are made by professionals, who could easily bypass the CBS chip. Indeed, if the record companies really do intend to issue unencoded versions of each release, all the pirate has to do is copy from the unencoded version.

Our coalition, from its inception, has asked the Congress to distinguish between private, home recording by consumers, for noncommercial purposes, and piracy, which is done for completely different purposes and has completely different effects. We don't think the recording industry does anyone a service by suggesting that home tapers, who are its best customers, who buy the greatest numbers of records, tapes and discs, are pirates because they tape to preserve their albums or make them portable.

The DAT Legislation is Unwise and Uncalled-For

Let me be perfectly clear. If the anti-DAT legislation before these Subcommittees is enacted, you will kill a new technology in its cradle. We believe there is no reason to stop, limit, or restrictively define technology, and even less justification for the federal government doing so for reasons other than health, safety or public welfare?.

There is no precedent for the U.S. Congress to ban a new product on any other grounds. Congress should not depart from this very wise precedent with this anti-DAT, anti-technology legislation. No matter how any package of bills is labeled, the anti-DAT provision is the very opposite of "competitiveness." We urge you to examine this subject very thoroughly and in detail; as you do, the anti-DAT legislation will become even less defensible and more outrageous as public policy action.

Thank you.

BILLBOARD, February 21, 1987

CBS, WCI Post '86 'Record' Profits

4th-Quarter Surges Figured Prominently

BY FRED GOODMAN

NEW YORK Strong fourth quarters helped both the CBS and Warner Communications Inc. (WCI) record groups post their best year ever.

For WCI, it marked the first time the company's Recorded Music Division's revenues topped the $1 billion mark, a feat the CBS Record Group has now achieved in eight consecutive years.

For the CBS Records Group, operating profits in the fourth quarter were $99.5 million, including a $30 million net gain on the sale of its CBS Songs music publishing operation. However, even without the one-time gain realized by that sale, the group managed to double its income from continuing operation. And although Bruce Springsteen's boxed set pointed the way, the company made a strong fourth-quarter showing with a wide range of product, including the Bangles, Luther Vandross, and Cyndi Lauper.

Profits from continuing operations were $61.5 million on revenues of $469.8 million. During the fourth quarter of the previous year, the group had operating profits of $33.4 million on revenues of $341.8 million.

CBS Records Group profits for the year were $192.1 million (including those gained from the sale of CBS Songs) on revenues of nearly $1.5 billion. Last year, the group posted operating profits of $89.7 million on revenues of slightly more than $1.2 billion.

At WCI, the Recorded Music Division had operating income of $43.5 million on revenues of $352.2 million in the fourth quarter. During the same period of 1985, the music operation earned $34.7 million on revenues of $270.1 million.

For 1986, the WCI music group posted operating income of $150.6 million on revenues of $1.1 billion. During 1985, the operation had income of $112.7 million on revenues of $912.3 million.

The 1986 performance of the CBS Records Group, believed to be the highest revenues and income generated by a record company, comes at a time when the company's flagship Broadcast Group saw its revenues and profits drop. CBS president and CEO Laurence A. Tisch noted that overall CBS operating profits declined 10% "although the CBS Records Group had the best year in its history."

As a whole, CBS Inc. posted revenues of $4.75 billion for the year and net income of $375.1 million, or $15.42 per share, owing in large part to the sale of the company's educational and professional publishing operations.

At WCI, where the film division managed to post modest gains, the company had total operating revenues of $2.8 billion, producing net income of $185.8 million, or $1.26 per share.

At WCI, the company noted that its three wholly owned domestic labels—Warner Bros., Atlantic, and Elektra/Asylum/Nonesuch—set a new collective sales record, while WEA International also set new revenue and earnings records. Among the firm's best-selling artists overseas was Madonna, whose "True Blue" sold a reported 6 million copies outside the U.S.

BILLBOARD, February 21, 1987

GRP Inks Four-Year Deal With MCA Distributing

BY IRV LICHTMAN

NEW YORK GRP Records, a leading jazz label headed by musicians producers Dave Grusin and Larry Rosen, leaves independent distribution in March with a four-year deal with MCA Distributing Corp.

An intriguing issue raised by the deal is that MCA is apparently not standing in the way of GRP's intention to release commercial digital audiotapes as early as the spring of this year.

Major labels say they are holding off on the DAT configuration because they are fearful of increased home taping abuses with DAT hardware and the negative impact DAT could have on the growing compact disk market. GRP has already supplied some manufacturers of DAT hardware with demonstration tapes.

As a label that began releasing CD product in 1984, GRP gained a reputation for high-quality CD productions, so that in 1986, the label's best sales year, it did more than 65% of its business in CD sales. GRP's roster includes such artists as Chick Corea, Lee Ritenour, Diane Schurr, and Grusin himself. Also, a digital re-creation of the music of Glenn Miller was one of the label's early CD successes.

According to Grusin and Rosen, the new agreement, which applies to the U.S. market only, will not alter the label—once distributed by Arista—as it is currently structured. A joint statement by the partners reads, "If anything, we probably will augment our personnel as needed to interface and work with the MCA distribution system. We expect to release more than 20 albums in our first year with MCA, and all the key marketing, sales, and promotion activities will continue to emanate from our own operation and management team."

Irving Azoff, president of MCA Music Entertainment Group, says that GRP has "proven its wide appeal to an ever-growing consumer base through the virtuosity of its artists and its total commitment to the highest standards of sound quality."

GRP, formed by Grusin and Rosen in 1976 as a production company, markets and distributes its product in Europe through its own wholly owned company, GRP Records Ltd., which has headquarters in Zurich, Switzerland. It also maintains licensing agreements with other companies throughout the world and has just signed an extension of its licensing agreement with JVC in Japan.

Listed as the No. 2 jazz label in the 1986 year-end Billboard survey, GRP is up for 10 Grammy Awards, with the nominated product representing 60% of its 1986 releases.

BILLBOARD, March 21, 1987

525-Store Chain Won't Carry Configuration In Near Future

Musicland Seeks Delay Of DAT Debut

BY GEOFF MAYFIELD

NEW YORK The 525-store Musicland Group has quietly initiated a campaign to delay the introduction of prerecorded digital audiotape.

Sharing major labels' stated concerns that home taping on DAT hardware could lead to lost sales, the world's largest music chain is telling labels that might be more inclined to launch albums on DAT that Musicland opposes the configuration's imminent introduction. Further, the chain, which includes stores operating under the Musicland, Sam Goody, Licorice Pizza, and Discount Records logos, says it has no plans at this time to carry DAT inventory.

Telarc Records, which does the bulk of its business in compact disks and maintains a catalog solely composed of digitally recorded product, received a letter from Musicland president Jack Eugster, stating the chain's opposition to a prerecorded DAT rollout in the immediate future.

Jack Renner, Telarc chairman and chief executive officer, will not divulge the specific contents of the letter, but says, "I was surprised by the letter. I certainly had not been that aware of Musicland's strong feelings."

Eugster declines comment, saying, "Our communications with the labels are private."

A rumor has been circulating through some specialty labels that the chain threatened to boycott LPs, cassettes, and CDs of labels that do release DAT, but Renner says that "nothing in the letter or any conversation" hints that Musicland's response will be that drastic. Says Eugster, "We've never boycotted a label, as far as I'm aware."

But Musicland's chief makes it clear that he thinks a commercial rollout of the configuration at this time is not in the music industry's best interest. "I hope we, as an industry, deal with DAT properly," says Eugster. "I personally find [Sen.] Albert Gore's legislation interesting and feasible.

In response to major labels' worries over home taping, Gore, a Tennessee Democrat, introduced legislation that would require DAT recorders sold in the U.S. to have copy-code scanners installed that would prohibit illegal duplication of copyright prerecorded music (Billboard, Feb. 21). There is now similar legislation in the House of Representatives (Billboard, March 14).

Renner says Telarc has not stated any intention to market DAT, nor has it proposed a timetable for such an introduction. "We are examining and evaluating and exploring the technology. Until we finish doing that, we don't have the foggiest notion when we'll be ready to bring out DAT," he says.

Musicland's letter to Telarc may have been prompted by a Sony DAT demonstration at January's Winter Consumer Electronics Show (CES) in Las Vegas, which used two Telarc albums.

Renner explains that Telarc, at Sony's request, entered into a "very limited and very tight" licensing agreement that allowed the hardware manufacturer to use those recordings at CES and "a couple of things in Europe." Sony could use those demonstration tapes again at June's Summer CES in Chicago, says Renner, if the label extends permission to do so.

While Telarc has received the letter stating Musicland's position, two other likely candidates have not: GRP and DMP.

GRP is the only label to publicly announce a commitment to a DAT launch. The jazz label recently entered into a distribution agreement with MCA (Billboard, Feb. 21). However, both Bud Katzel, vice president of sales and operations for GRP, and John Burns, senior vice president of MCA Distributing & Manufacturing, say that DAT will not be distributed through MCA's pipeline. Instead, GRP plans to market the product on its own through audio hardware dealers and is pointing to September as a target for the product's debut.

According to Katzel and Burns, they have not received communication from Musicland regarding its position on DAT. Nor has DMP, another label whose product was used by Sony under a limited licensing agreement in the same CES demonstration as Telarc.

Like Telarc, DMP is a digitally oriented label that relies on CDs for a bulk of its sales. Tom Jung, the label's president and founder, is evaluating DAT but has not determined a timetable for the release of that configuration.

BILLBOARD, March 28

Global Profits Soar To $120 Million In '86

PolyGram's Acts Bring In Banner Year

BY NICK ROBERTSHAW

LONDON Good acts and good management were the secret of PolyGram's banner year in 1986, says senior executive vice president David Fine. The Philips subsidiary pushed its worldwide gross to $1.3 billion and saw profits soar 50% to $120 million for the best-ever 12-month performance in the company's history (Billboard, March 21).

Philips will not release territory-by-territory results, but it is known that in the U.S. PolyGram grossed $226 million, up from $202 million in 1985, while in West Germany the company grossed $181.7 million in 1986, up from $163.5 million the year before.

Overall, PolyGram joins a select club of international record companies—WEA and CBS are the other members—with annual grosses over $1 billion and profits over $100 million.

"Ever since the days of our discussions with WEA, we've been going through a major restructuring process," says Fine, the London-based executive whose responsibilities now include worldwide record operations. "We've lowered our break-evens and substantially reduced our whole infrastructure cost.

"We are leaner, better-staffed, and better-managed. All our operations in 27 countries have been trimmed down to size so as to work more effectively, and on top of that we have replaced the twin head offices in Holland and West Germany with a simpler management structure concentrated in London."

Fine acknowledges Dick Asher's role in turning the American operation around. "There was a time when our importance in the U.S. marketplace was questioned, but he has produced for us a highly profitable business, with very effective marketing of major acts like Bon Jovi and Cinderella.

"In fact, that has been true of our worldwide operations generally. We have enjoyed a very good run, with very good artists, and we certainly aim to keep it that way."

CD business has clearly been an important factor in PolyGram's improving fortunes, though Fine is reluctant to exaggerate its impact, noting that on a worldwide basis vinyl album sales show little decline and that in those markets such as Japan and the U.S. that have softened most markedly there are specific factors hastening the switch to CD, most obviously the ease of returns.

But he agrees that PolyGram benefits from a disproportionately high share of CD sales, partly, he says, because it was first on the market and partly because of its strength in the most collectible product areas, including classical and jazz.

Overall, PolyGram will look to maintain its new level of profits, Fine says. "It will depend on the dollar rate and other factors, but this is a sustainable profit; it's not just a flash in the pan."

House Subcommittee OKs DAT Copy-Code Provisions

BY BILL HOLLAND

WASHINGTON A House subcommittee approved a package of important trade amendments March 18, including a one-year version of a bill requiring all digital audiotape (DAT) recorders imported to the U.S. to be equipped with copy-code scanners to prevent unauthorized copying.

In a voice vote, members of the Subcommittee on Commerce, Consumer Protection and Competitiveness sent along the measure as part of a markup of the huge House Trade bill, with several other subcommittees approving similar packages.

The DAT bill, H.R. 1384, was introduced March 3 by Rep. Henry Waxman, D-Calif., and five cosponsors. It is a companion bill to the Senate's S. 506, introduced Feb. 5 by Sen. Albert Gore, D-Tenn.

There will be a hearing on the DAT bill "within 30 days," according to a subcommittee source. The approval came before a hearing because legislators are taking the view that timing is important in this issue—recording industry lobbyists have let them know that Japanese manufacturers plan to introduce DAT machines in the U.S. by the end of the year—possibly sooner.

"We were very anxious not to

(Continued on page 75)

VARIETY

New York, February 18, 1987

Goldman Pitches Dual-Tape Stock As DAT Solution

Miami Beach — RCA/Ariola topper Elliot Goldman proposed a compromise between Japanese DAT manufacturers and U.S. record companies in his keynote address at NARM Feb. 14, outlining a plan that would allow consumers to use DAT for home taping while compensating copyright owners for the unauthorized use of their work.

Goldman solution calls for the introduction of two lines of digital audio tape software, one that can't be duplicated by home tapers, and another that can, but at a higher price that would, in fact, pay for copyright use.

Goldman's unexpected proposal detours sharply from a U.S. Senate bill, introduced earlier this month after intense lobbying by the record industry, that would force DAT manufacturers to include an anti-copying chip in DAT hardware to prevent any and all home taping.

In presenting his plan, the RCA prexy/CEO became the first major label chief to acknowledge "the homegrown right of home copying," which, he told the NARM gathering, is "a permissible activity, subject to a ... payment to the copyright owner."

Hitherto, record execs as a group have collectively reviled home taping as a scourge of the industry, siphoning off an estimated $1.5-billion in profits a year.

"It is unrealistic to believe that hardware manufacturers would or could ever agree to bring a new cassette machine to the marketplace that did not have copying capability," Goldman opined, adding:

"We must all face that reality, and not lose the opportunity because it entails some distasteful elements."

Goldman scheme caught record and retail execs at NARM by surprise and drew a cool, if somewhat mixed reaction from those interviewed.

"Practical application presents enormous difficulties," WEA Corp. president Henry Droz said, adding that, while WEA has thus far pursued the legislative solution, Goldman's idea "should be seriously considered."

Tower Records chief Russ Solomon was less ambivalent, dismissing the plan as "ludicrous and impractical."

"We have enough problems stocking merchandize out there. To think of duplicating inventories is bizarre," he said.

Heavyweight rackjobber David Lieberman of Lieberman Enterprises, on the other hand, found that Goldman alternative "sensible and realistic," given the "impossibility" of preventing home taping.

Bad Press

Goldman, unusually frank and substantive by convention standards, next turned his attention to the "seemingly endless spectre of illegality or unfavorable publicity" that has troubled the industry, especially since grand juries in five cities began investigating allegations of mob-related payola practices in the independent promotion biz a year ago.

Goldman warned the NARM crowd that a "cloud of potential illegal behavior and morally reprehensible activity" will hang over the industry "so long as we are willing to pour $50-60,000,000 a year into a marketing technique that doesn't pass the smell test ... and accept a sales reporting system that is based more on its vulnerability to manipulation that its accuracy of reporting."

Independent promotion is not "inherently evil," Goldman continued, "but independent promotion combined with a wildly escalating bonus system, pegged to a 75-station-in-two-weeks-or-bust attitude is the haven of the "irresponsible elements in our history."

Goldman called upon the industry to form a top level task force, composed of senior execs from NARM, the RIAA, NAB and trade publications, goal of which would be "to establish accurate and verifiable reporting systems to a central and non-corruptible source, with appropriate penalties for those who choose to distort the system."

Goldman: Consumer Choice On DAT

Keynoter Unveils Dual-Stock Proposal

BY IRV LICHTMAN

MIAMI BEACH A dual-inventory approach to digital audiotape software and hardware as a way to satisfy demands of copyright owners has been advanced by RCA/Ariola Records president Elliot Goldman.

NARM REPORT

In a wide-ranging keynote address Feb. 14 to conventioneers at the National Assn. of Recording Merchandisers (NARM) meet, Goldman also called for an industry boycott of all merchandisers who are found to be selling stolen or counterfeit goods "until restitution is made on the bogus merchandise."

Turning to sales and radio exposure reporting systems, Goldman called for the creation of industry task forces to "establish accurate and verifiable reporting systems to a central and noncorruptible source, with appropriate penalties for those who choose to attempt to distort that system."

Goldman restated RCA's "hard and firm position that we will not support the DAT technology or license our material for use on such a format until such time as this fundamental issue of DAT as a home taping device has been satisfactorily resolved." He went on to offer dual inventory as a real-world solution that "accomplishes most of the main goals of all parties and, more importantly, achieves the main desires of the various governmental authorities, those being copyright protection, technological advancement, and satisfying consumer expectation."

Said Goldman, "In its simplest terms, [the solution is] that record manufacturers and electronics hardware manufacturers agree on supporting DAT technology and hardware, but in the form of a machine that could copy recorded material or not copy recorded material based upon whether the consumer chose to buy his product in a copyable or noncopyable format—both of which would be available to him, but at different price levels."

Goldman said such a dual inventory would accomplish eight goals:

- Copyright protection would be removed from a "continuous legislative, antagonistic forum and placed in a cooperative marketplace forum."
- Control of the copying of copyrighted material would be given to its owner.
- Home taping of copyrighted material would be acknowledged as a permissible activity subject to a marketplace-determined payment to the copyright owner.
- The "burden and nightmare" that government authorities face in determining royalty needs and their allocation would be lifted.
- Control over exactly what compensation it wishes to receive for the yielding of some control over its copyright material would be given back to the software industry.
- Development of a total digital environment for recorded music—an environment that is rapidly being perceived as the state-of-the-art format for recorded music—would be encouraged rather than restricted.
- A marketplace environment would be created in which recorded music is perceived by the consumer as having greater value because of enhanced technology.
- A cooperative spirit would be created for the promotion of DAT, reducing the time frame of acceptance in a way similar to the compact disk.

Goldman said he realizes that the dual-inventory element of his solution is "not an attractive prospect for the merchandising community. It is obviously not an attractive prospect for manufacturers, either. However, it seems to me [to be] the only way that we can solve the fundamental issue, as it is unrealistic to believe that hardware manufacturers would or could ever agree to bring a new cassette machine to the marketplace that did not have copying capability."

Earlier in the DAT portion of his address, Goldman said he found it "disquieting" to learn of GRP Records' distribution deal with MCA in view of GRP's intention to market DAT software later this year (Billboard, Feb. 21). "MCA should think carefully about the repercussions of lending themselves to that activity," Goldman said. (Billboard has also learned that Goldman voiced his displeasure directly to MCA executives during the NARM convention).

Goldman also noted, without naming names, the intentions of "one of the industry majors in Japan" to acquire a major U.S. label. This was an apparent reference to rumors last year of a Sony acquisition of CBS Records. (Goldman told Billboard that he firmly believes CBS Records is on the sales block).

On the issue of dealers who sell stolen or counterfeit product, Goldman declared:

"Frankly, I am fast approaching the conclusion that the proper way to confront this activity is that when stolen or counterfeit merchandise—and don't [tell me] that when you're buying product at 50%-75% off normal wholesale on a one-shot basis from an unauthorized source that you don't know it's stolen or counterfeit—is found in a store, [the individual, chain, or rack should] be publicly labeled by the industry as a bootleg store and that the affected manufacturer or manufacturers [should] refuse to sell legitimate merchandise to the bootleg operation until restitution is made on the bogus merchandise. If the Justice Department wants to make something of that proposal, let them."

Goldman moved to call for an industry task force to deal with sales and radio exposure reporting systems. Citing the removal of major U.S. corporations from the label scene over the past decade and drawing on his own experiences at the CBS, Warner Bros., and RCA labels, Goldman said a number of factors had led to corporate "fear and lack of faith in our executives and our business."

One of them, he said, was manufacturer, merchandiser, and trade publication acceptance of a sales reporting system that is based "more on its vulnerability to manipulation than its accuracy of reporting."

Goldman's solution, which he characterized as "obvious and simple, but expensive and time-consuming," is "a commitment from manufacturers, merchandisers, trade publications, and the media to establish accurate and verifiable reporting systems to a central and noncorruptible source, with appropriate penalties for those who choose to attempt to distort that system."

To resolve the issue—which he conceded had been long subject to "hesitant, private discussions"—Goldman seeks the formation of task forces involving senior officers of NARM, the Recording Industry Assn. of America, trade publications, and the National Assn. of Broadcasters to "begin the process of setting the timetables and goals to which we must commit ourselves."

He said, "These changes are central to the future health and growth of our industry, and their cost, while potentially high, will be returned many times over to those who operate in this revised and refined marketplace."

In conclusion, Goldman said, "[This] business . . . despite its periodic nay sayers and incessant doubting Thomases, sustains itself and continues to grow. We have an opportunity through new technology and creative commitment to establish a firmer base from which this industry can function."

RESPONSES OF CHARLES FERRIS
TO QUESTIONS FROM MEMBERS OF
SUBCOMMITTEE ON PATENTS, COPYRIGHTS AND TRADEMARKS,
SENATE JUDICIARY COMMITTEE

Questions of Sen. DeConcini

1. I understand that early prototypes of DAT allowed digital-to-digital taping? Have the Japanese Government and manufacturers taken any action concerning DAT?

Answer

Experience in consumer electronics and broadcasting has shown that, especially where a new technology is not proprietary to any particular manufacturer, it will become established only when a single set of technical standards has been agreed to. The final standards for DATs, covering all major technical specifications, were agreed to by an international conference involving 84 companies, from all over the world. Thus, the limitations on digital-to-digital taping included in the DAT Conference Standard were accepted not only by Japanese hardware manufacturers, but by all hardware manufacturers with any interest in the product. Subsequently, these limitations were endorsed as a matter of policy by the Government of Japan.

As the question implies, all recent prototypes and all sale models of DATs have adhered to the DAT Conference Standard, which employs several methods to prevent direct digital-to-digital taping of prerecorded material if the copyright owner so wishes. Even when the compact disc standard was established, at an earlier international conference, provision was made for such a subsequent standard involving future DATs. At the time of the Compact Disc conference, a "slot" was reserved in the "subcode," which accompanies the digitally encoded music. If a "1" appears in this slot, digital recorders would take no notice of it. If a "0" appears there, however, any future digital recorder would respond to the presence of the 0 in this slot, when detected in the digital input stream, by shutting down. The subsequent DAT Conference decided to implement this scheme and to require that any DATs search for this "0-bit" in the subcode, and shut down upon finding one (they are present thousands of times a second). So far as we know, all compact discs on the market have been made from digital master tapes in which the 0-bit appears as a matter of course. So even if compact discs and DATs employed the same sampling rate, direct digital-to-digital recording from CDs would not be possible.

As a matter of technical preference, however, the DAT also employs a different digital sampling rate from that of the compact disc. The proprietors of the compact disc format chose a sampling rate of 44.1KHz, meaning that the signal is sampled about 44,000 times per second in order to be accurately converted into digital code. This figure was chosen in part to ensure that most of the current repertoire of symphonies could be recorded onto a single disc. However, designers of the DAT format were under no such limitation, and believed that as a technical matter a sampling rate of 48KHz was preferable for recording and playback. In choosing a different sampling rate, they happened to erect a further barrier to digital-to-digital recording of compact disc (unless one has access to a $10,000 sampling rate converter, which still would not solve the "0-bit" problem). In any event, most compact disc players on the market do not even have digital outputs, and the DAT Standard provides no incentive for their inclusion now.

The DAT Conference further provided that any future accessories, such as digital amplifiers, conform to these requirements, so that they might not be bypassed by moving some DAT functions to an outboard unit. And to encourage the development and marketing of prerecorded software, the standard requires that DATs have a playback-only facility at the 44.1KHz sampling rate, because present digital master tapes from which compact discs are made are recorded at that rate. This facility saves the record company the trouble of remastering their digital master tapes.

(a) Is it appropriate for consumers to be deprived of the best technology available because of decisions by the Japanese Government and/or the electronics industry?

Answer

In the best of all possible worlds, the answer to this question would be No. However, the more pertinent question seems to be whether it is appropriate for consumers to be deprived of DATs entirely because of a recording industry fear that its digital master tapes might be widely duplicated in pristine digital form. Our own point of view has been, and is, that the greater the quality and enthusiasm involved in home taping, the more productive and beneficial it has been for the recording industry. Home tapers buy the most records and tapes, and audiophiles are the most active home tapers.

The prohibition of direct digital-to- digital taping put to rest the "perfect clone" charge hurled so furiously against the DAT, and it was hoped that it would encourage record companies to issue prerecorded software in this format. It still allows consumers to make excellent copies from compact discs and any other material by connecting the conventional or "analog" output of the CD player (again, the only output that most CD players have) to the amplifier auxiliary input, and then connecting the DAT's analog set of inputs to the amplifier's tape jack. Effectively, this routes the signal through the CD's digital-to-analog converter, and then through the DAT's analog-to-digital converter. The result is an increase of about 10 decibels (DB) in signal to noise ratio compared with a "digital clone." However, the resulting signal to noise ratio is still better than can be achieved by all but the most expensive and sophisticated open reel or conventional cassette recorders.

This slight degradation reverses the present situation with respect to analog cassettes, in which the home taping product is usually vastly superior to the prerecorded product. When record companies issue prerecorded DAT tapes, they will be purely digital, so will sound slightly better than the best product that can be recorded at home.

(b) If the Japanese Government and the electronics industry have recognized the threat to the recording industry by deciding not to market DAT with digital-to-digital copying capability, why won't they go a little further and protect copyright by accepting the copy-code scanner?

Answer

Here we are talking about a difference of night and day. The anti-taping chip prevents not just digital-to-digital taping from digitally encoded sources, but all home taping with a DAT, from any source that the supplier chooses to encode -- compact discs, cassette tapes, vinyl albums, or FM broadcasts. This is not going just a "little further;" it is essentially banning the DAT from the market. These recorders, due to their sophistication and complexity, must be introduced at relatively high prices. No one is going to want such a recorder that can't do what other recorders, already available or owned by the consumer, can do.

Moreover, retailers will not want to stock a machine when it is not clear when or how it can be used. The retailer would be unable to explain to the consumer the precise circumstances under which unencoded software might be available; he will be helpless in the face of warranty claims from consumers who "fiddled" with the anti-taping chip and wound up with a totally inoperable DAT. And, if the DAT anti-copy chip produces "false positives" and shuts down a home recording of a live performance, the retailers and manufacturers will be accosted by irate customers who have sustained major losses, and have nowhere to turn.

In addition, there is mounting evidence that the encoding method chosen to trigger the "copy-code scanner" _must_ degrade any music in which it is included. Attached please find a copy of the cover article of the July, 1987 issue of _High Fidelity_ magazine.

Most fundamentally, the anti-taping chip is a denial of a lawful right of American consumers -- the right to private home taping for personal use. Private, personal consumer home taping is legal; denial of that right by another government or an industry would be presumptuous.

Questions for Mr. Ferris

1. If Congress were to conclude, after the exhaustive and detailed study you advocate in your testimony, that home taping, especially DAT taping, causes substantial displaced sales and economic hardship to the record industry, what solution should we enact -- a royalty or a technological solution such as advocated recently by the recording industry? Would you say that an outright ban on DAT would not be appropriate under any circumstances?

Answer

The question posed here is similar to a question posed in the 1986 study by the Office of Technology Assessment, Intellectual Property Rights in an Age of Electronics and Information. A major conclusion of that study was that a "right" on behalf of the recording industry to receive some sort of remedy at the expense of consumers and other industries cannot be assumed simply from evidence of displaced sales. The study points out that this would be circular reasoning (p. 200):

> Arguments based on an analysis of harm presume -- and so cannot be the basis of -- a proprietary right in the new opportunities for use. Potential harm, therefore, cannot in and of itself justify the extension of a right. Instead, some other criterion, such as an increase in efficiency or access . . . is needed in order to determine whether to extend the right to new uses.

In other words, even if displacement and "economic hardship" could be proven, this is only part of the question. The other side of the coin involves the overall positive benefits that the availability of recorders and tape confer on the recording industry and the public as a whole, in light of the constitutional purpose of copyright in disseminating material to the public. Decisions or conduct in one industry sometimes harm or benefit another. It was the basic insight of the Supreme Court in the Betamax case that it would be dangerous, in such circumstances, to infer contributory infringement. Both software and hardware producers are intellectual property proprietors; both industries serve the public. (Attached please find a letter I submitted to the staff of Rep. Kastenmeier on May 21, 1987, addressing possible further inquiries for studies by the OTA.)

An outright ban on DAT seems unwarranted under any circumstances. The implications of the Congress simply banning new technology rather than dealing with underlying copyright issues are too far reaching, and hence too dangerous. One of the reasons that our opposition to S. 506 is so strong is that this legislation is tantamount to a ban on DAT.

Questions of Sen. Leahy

1. You have frequently suggested that the relationship beteen the electronics industry and the music industry is symbiotic. But during the first generation of DAT recording, consumers may purchase only a minuscule amount of software prerecorded on digital audio tape. Thus, the relationship will not be symbiotic, it will be parasitic. The Japanese industry will not be coexisting with the American industry, it will be thriving off it as consumers develop their own tape collections. Why shouldn't Congress require your clients to agree to share the fruits during DATs first generations according to the plan outlined in this legislation?

Answer

As is indicated in my main statement, if the recording industry will not be prepared with prerecorded tapes when DATs are available on the U.S. market, it has only itself to blame. As Mr. Feldman has shown in his own answers to additional questions, a system for duplicating prerecorded DAT tapes, perfectly adequate to the initial demand, has been perfected and will be available. A high speed system that will make duplication very economical will be available by the time a mass demand can develop.

The experience with new recording formats has been that people buy the hardware for the purpose of making tapes at home, then find that professional software producers are much more efficient at providing primary program material. (This has been the experience with computers as well.) The audio cassette was initially a business dictation medium, that was adapted by the hardware industry for recording music. It was only reluctantly embraced by the recording industry, and until recently prerecorded tapes were inconvenient to buy at retail. With the addition of new portable hardware such as car stereos and the Walkman, however, this format became irresistible. At present, it provides the industry's largest income stream, outselling vinyl disks by three to one.

In our view, the history of audio and video recording products shows that the symbiosis that we have claimed is in fact genuine. It would be a distortion of markets and a waste of energy and resources to attempt to channel money one way or the other at various stages of development of a format.

Incidentally, we have not heard any denial of the report in the press (attached) that five major record companies, accounting for more than half of the worldwide market for prerecorded music, declared in a London meeting of the International Federation of Phonogram and Videogram Producers ("IFPI") that they would boycott the prerecorded software market for DATs unless the anti-taping chip legislation were adopted.

Questions of Sen. Hatch

1. In the 1984 Betamax case, the Supreme Court sanctioned the time-shifting purpose of video home taping as a fair use, even though reproduction of entire works generally would not warrant fair use exemption. In what ways might DAT taping be distinguished from the Betamax holding? Why should DAT taping not be considered covered by the Betamax ruling?

Answer

In our view, the most fundamental holding of the Supreme Court in the Betamax case was that it is not contributory infringement to sell a product that has significant uses that are clearly non-infringing. In implementing this basic holding, the Court went on to affirm that video time-shifting is an example of clearly non-infringing fair use. However, for purposes of the Court's basic holding, other clearly non-infringing uses would be sufficient -- recording of live musical performances, personal or business dictation, etc.

We also strongly contend that within this clearly non-infringing area are such activities as taping from one's own records and prerecorded tapes for the purpose of "place-shifting" and editing. This interpretation is supported by the fair use concept, and by the legislative history of the protection afforded sound recordings when they were first covered in 1971.

2. Section 107 of the Copyright Act specifies certain kinds of copying that are considered fair uses. For example, making copies for classroom use by a teacher or for news reporting by a reporter or for other scholarly and research purposes is not an infringement of copyright. Would insertion of a copy-code scanner make it impossible for individuals to copy for one of these permissible uses under current copyright?

Answer

It is certainly conceivable that uses mentioned in this question could be entirely frustrated by encoded material triggering the anti-taping chip. From a broader perspective, however, we believe that the major effect of the passage of this legislation would be to prevent the DAT from ever becoming a product in widespread use. Therefore, even beyond the question of fair use, the DAT would be unavailable for uses that have no relation to prerecorded music at all. For example, one of the great promises of the DAT is that it will foster the independent small scale creation of new music, by new composers and musicians, and that it will also foster the dissemination of this music in the highest quality format available, yet on a small and affordable scale.

Even if this legislation does not entirely kill the DAT, the inclusion of the anti-taping chip raises the specter of "false-positives," in which recordings entirely independent of prerecorded music are frustrated by faulty responses by the chip in shutting off the recording. This raises a serious question of legal responsibility for valuable lost recording opportunities. Can anyone be held responsible for such losses? In reality, the fault would be with the Congress, for mandating a technology that puts the consumer at risk.

3. I would like to follow-up on this point to some degree. Congress has specifically included in our copyright system a fair use doctrine for some important reasons. Essentially Congress wanted to permit and encourage copying of portions of works for scholarly or educational reasons. How could the technological solution accommodate these purposes for the fair use doctrine?

Answer

One of the reasons we believe the overall approach of this legislation to be dangerous and unacceptable is that it allows for no fair uses -- those mentioned, and others, such as vinyl album preservation (they would be encoded too), editing, "place shifting" (combining selections from purchased albums for playing in the car), etc. This flaw is, we believe, fatal. We don't see any way that the Congress could micro-manage the copyright laws or technology itself in order to determine in advance what recordings technology will allow and what recordings technology will frustrate. As in the case of proposals for royalty taxes on blank tape and recorders, every proposed exemption or exception raises at least a dozen questions as to where lines will be drawn and who the beneficiaries should be.

Each time a line is drawn, definitional problems will arise as people on one side of the line search for ways to arrive at the other side. It usually sounds easy to say that "the blind" will be exempt, or "businesses will be exempt," but what this really means is that certain organizations will be given the "opportunity" to distribute "exempt" goods to their members by forming their own inefficient distribution networks, in effect putting them into a business they are not suited for and that they do not wish to be in. In this particular case, it would be completely unrealistic to make specially configured products available only to certain groups. And already, artists have begun to point out the productive uses they wish to make of DATs, if they should become available for widespread use at a reasonable price. See, e.g., statement of Stevland Morris, pka Stevie Wonder, and other attached statements and letters sent subsequent to the hearing.

4. I would like to address to the opponents of legislation to implement a technological solution the following question: You have noted that the copy-code scanner interferes with the music recording process. Rather than damage the recording capabilities of your DAT machine, would you prefer a modest royalty on those devices to protect the purposes of copyright law?

Answer

With all respect, we do not believe that the law or the facts warrant a situation in which the extreme and draconian nature of the anti-taping chip should cause its opponents to feel hostage to a "modest royalty." The availability of tape recorders and blank tape has been a long-term boon to the recording industry, and if push came to shove, the industry would have to admit that it places a net positive value on the availability of tape recorders in the marketplace. We believe that this value has been confirmed by recent trends in the marketplace itself, which have seen record companies roll up unprecedented profits. (Articles attached).

The major agent in this new cycle of prosperity is another invention of the hardware industry, the compact disc player. Every time someone buys a compact disc player, within a year he or she buys 40 or 50 compact discs. At current prices, this means that within a year the consumer, after making his hardware purchase, spends several times as much money with the software producers. What is extraordinary about these returns to the recording industry, from the compact disc player, is that there has been a shortage of stamping capacity for compact discs, so the amount of material available for purchase has been limited. Therefore, many consumers have been foregoing purchases entirely, waiting for material to appear on compact discs. Nevertheless, sales and profits are at record levels.

We don't think it is realistic to fear that DAT recorders will threaten this compact disc-based prosperity through home taping. Rather, we think the main fear is that the DAT format will allow new entry into the market for prerecorded, high quality digital music, thereby easing supply constraints, reducing inflated retail price levels, and allowing newer entrants to establish positions of leadership. We don't think that hardware manufacturers, in exchange for the privilege of making DATs available, should be saddled with a royalty tax, nor should consumers, under these circumstances, be forced to pay more.

6. How soon will DAT recorders appear on the American market? What effect will this have upon the market for audio recording machines?

Answer

As the attached article indicates, one manufacturer, Marantz, has announced that it will deliver DAT machines in the U.S. in October, 1987. (Marantz is U.S.-owned. It is affiliated with a factory in Japan that is majority-owned by Philips, a European manufacturer.) We have no knowledge as to when other manufacturers will be making DATs available here.

According to trade press reports, the probable price range of DATs upon their introduction will be $1300 to 1600, and quantities will be very limited. Initially, the only products that would face competition from such machines would be the very most expensive "high-end" cassette and open-reel recorders. Several manufacturers have announced that once general purpose recorders are available, they will offer automotive DAT players. The trade press has speculated that these might be offered in the fall of this year as well. As autos might only carry one type of player, these might displace some high-end conventional auto cassette players.

In general, we expect the DAT to become the home complement to the compact disc player, just as the cassette recorder has become the complement to the home "record player."

Mr. KASTENMEIER [acting chairman]. Thank you, Mr. Ferris.

In the absence of the chairman, the House will take this opportunity to ask questions of the four panelists, and we will await our Senate colleagues to return to ask the more profound questions. [Laughter.]

I want to greet you all. This is perhaps the first public opportunity I've had to congratulate the Recording Industry Association of America on their selection of a new president, Jay Berman, who served with very great distinction as vice president of Warner Communications and has a superb reputation in the field of communications and entertainment.

Mr. BERMAN. Thank you, Mr. Chairman. After Charlie's speech, I'll need that. [Laughter.]

Mr. KASTENMEIER. I must say, though, I have a basic reservation, I guess, about whether this country should be put in a position of attempting to defeat perfection and advances in technology somewhat artificially, and also where this may lead us from a precedent standpoint, because there are scores of interests out there that feel, I suppose, threatened by some form of technology, higher technology. If we attempt—it concerns me that we should enter into attempts to defeat the technology or to strain it to accommodate our other interests, and we surely do have interests. The Recording Industry Association of America has very special proprietary interests in its works. I understand that.

To put it in historical perspective, it was the Congress in 1971 that provided a copyright in works fixed in musical form on records. Also in the 1976 revision generally the recording industry shared the advances with other proprietors. Even selectively, several years ago we repealed the first-sale doctrine to accommodate the recording industry alone. We did not even do that for the motion picture industry or the video industry of this country, but only for the recording industry in an attempt to enable it to prevent the unauthorized reproduction of its work.

We are once again called upon, the Congress, to respond to perhaps the same problem by something, Mr. Berman, that you say "will not solve the problem."

I should ask you, I guess, what will solve the problem?

Mr. BERMAN. Well, Mr. Chairman, the copy-code scanner might well be a permanent solution for the underlying problem, which is, in fact, as I have said, an issue to be addressed in its copyright dimensions.

Let me respond, first, to something you said earlier about the 1971 act and then on the question of distinguishing on the rental issue between audio and video. During 1971 I was a staff member here in the Senate and worked somewhat on what happened in the 1971 revisions, and again in 1976, and I must say that I find it hard to accept the notion that there is an implied exemption for audio home taping in the 1971 act, because if there was, it was something that was not carried forward into 1976.

Second, it seems to me on your very point, distinguishing between the action Congress took on a record rental right in terms of audio as opposed to video. There Congress was able to distinguish the circumstances that led to envisioning a problem in the rental of records, which was a precursor to the taping of records, and the fundamental difference there is that in the video environment time shifting is, in fact, a legitimate use. There is no time shifting in audio. People don't tape records to hear them at 10 o'clock as opposed to hearing them at 8 o'clock. They generally tape records for the purpose of keeping the tape of the record, and in many instances, because taping is cheaper, it is the alternative to buying.

As far as the question of the precedential value of what we're doing here, I can't speak for the precedential value. What we would like to have happen is for the Judiciary Committees to look at the underlying issues, which having read everybody's statement, apparently there is some issue here, and to make some decision based on the circumstances surrounding the extent to which audio home taping affects the record industry.

I can't speak about what precedential value that would have, because I don't know what other circumstances might exist or what other industries might conceivably be harmed.

I might also point out that we're not trying to ban this technology, but to limit its ability to impinge upon our right to reproduce our product.

Mr. **Kastenmeier**. Well, on the rental thing, of course, this subcommittee and the Congress agreed with you. We are not arguing that point.

Mr. **Berman**. And for that——

Mr. **Kastenmeier**. The point I made is that the Congress has from time to time responded to your needs, but in looking for some solution here I would hope that the Congress would not be importuned every couple of years to pass some special legislation, really unprecedented in some cases, for the record industry alone. If it's true what Mr. Ferris says, that the record industry has been a money-making industry in the past few years, and it hasn't always been, I guess, should that fact not be taken into consideration?

Mr. **Berman**. Mr. Chairman, I have not taken the time to look at the financial statements of the people who have paid Charlie for the fundamental truths revealed here today, but I would guess that they are in far better financial shape than the United States recording industry, which in fact has just had a reasonably good year.

I am troubled by the notion introduced by the people who represent the manufacturers of these machines and tapes that somehow the Congress should divine a limit on the amount of money that U.S. record companies can earn, because if that is in fact the litmus test, then why shouldn't that test be applied to the manufacturers of these machines and of the tapes, who incidentally are all foreign?

Do we have to reach some level of distress? I'm kind of troubled by that notion.

Mr. **Kastenmeier**. I will concede that that was an element differentially in terms of the motion picture industry and the recording industry in the repeal of the first-sale doctrine, one of the elements that Congress considered.

Let me ask you—I'm sure that you cannot answer, if this is a temporary solution for records, what we might do about other matters, but the committees will have, I think, to review whether we should try to limit technologies by various means relating to movies, computer software, databases, if their advocates recommend similar solutions. That, I understand, is not a concern necessarily for the record industry, but it is of concern to us.

Mr. BERMAN. Well, as you know, Mr. Chairman, you know better than I, the motion picture industry has a very eloquent spokesman and it would be presumptuous for me to present his case. Suffice it to say that over the years when the questions of audio and video have been before the Congress, I think by and large people have been able to distinguish the factual circumstances surrounding both. I think there are factual differences.

Again, I can't address your issue, which I think is a troublesome one from the perspective of the subcommittee, and I would urge you to look at it. But I do not know what these other circumstances are and what precedential value they might have in other instances. I am really at a loss to respond to that, Mr. Chairman.

Mr. KASTENMEIER. I have some other questions, but I would like to defer to my colleagues.

The gentleman from North Carolina, Mr. Coble.

Mr. COBLE. Thank you, Mr. Chairman.

I'm reminded, Mr. Chairman, of the hearing we had on our side last year involving the patents in space problem. At that time I told the members of the subcommittee, Mr. Chairman, as you may remember, and I also told those appearing that as a practitioner of law, I never engaged in the law of patents or copyrights. I was, therefore, pretty much overcome by the complexity. I said when you compound that with the law of space, I am totally confused.

Now I'm not suggesting that the subject at hand is as overwhelming to me as the law of space compounded with the law of patents, but I think we will all agree it is, indeed, a complex area. I'm listening and hopefully learning as much as I can, Mr. Chairman. I would like to direct one question—I could direct it to either member of the panel, but I will, for the purposes of simplicity, I will start with Mr. Berman.

Mr. Berman, if legislation along the lines of S. 506 and H.R. 1384 is enacted, what role do you envision for the Federal Government under this legislation?

Mr. BERMAN. Mr. Coble, we envision very little, quite frankly. What legislation we're seeking in terms of the two bills that you've mentioned is designed to afford us a breathing period so that the underlying copyright issues, which, as you have indicated, are fairly complex, can be addressed in an environment in which the machine is not here. That is the threshold issue, I think, for having a deliberative opportunity to see whether copyright law and the advance of technology can be harmonized.

The problem is that, once the machine is here and people have purchased it and are using it to tape, I have difficulty believing that we can achieve that kind of objective environment. What we're asking for is a limited time period in which the machine would be required to carry the copy-code scanner that would give the Congress the opportunity to take a look at the underlying issues which you have raised and the issues, the broad issues, being raised by Chairman Kastenmeier.

Mr. COBLE. Thank you, Mr. Berman.

Would others care to respond to the question?

Mr. **Ferris**. Mr. Coble, I think you raised a significant question. I'm sure, as a lawyer, you know that the burden is rather heavy for a temporary restraining order. Those that seek it, Mr. Berman and his association, should demonstrate that there is a clear and present danger; that there is a significant, irreparable harm that could come to the recording industry before that should be justified.

I think the ban—the remedy that Mr. Berman and the association seeks in the legislation is effectively a ban. No machines would be manufactured with this copy-code scanning in it because they would not be able to do what every predecessor in the previous generations could do—to record. There is no market for that. Who would pay $1,300 for a piece of equipment that can do less than the previous generation? It won't be here. It's an effective ban on the market, and so it shouldn't be dressed in other—in a fancy hat and say it isn't something that it really is.

I think that the burden is very, very heavy. I think that those bills are very, very dangerous. I think it would set a precedent for the U.S. Congress to, for purposes other than the health and safety of the American public, ban a particular product from the American marketplace. There is no health and safety involved here. There's nothing here but economic protectionism for the recording industry, who I believe has a real motive to protect the marvelous profit streams they have from the compact discs and the inability of the pressing capacity worldwide to meet the present demand.

I can understand it from their standpoint, but I don't think the Federal Government should be a party to enforcing that type of monopoly.

Mr. **Feldman**. Mr. Chairman, further to what Mr. Ferris just said, I think it's important to realize that we already have a digital playback media. It's called a compact disk player, and it's been doing phenomenally well. It's exceeded everyone's expectations and has reaped great profits for the software industry as well as for the manufacturers of compact disc players.

If the DAT were to be inhibited by this device, it would become nothing more in the eyes of the consumer than another digital playback device, but we don't need another digital playback-only device. We've got one; it's called compact disks.

Mr. **Coble**. Thank you, gentleman.

Mr. Chairman, I have no further questions.

Mr. **Kastenmeier**. I yield back to Chairman DeConcini.

Senator **DeConcini**. Thank you, Representative Kastenmeier. Representative Morrison.

Mr. **Morrison**. Thank you, Mr. Chairman.

I apologize for being late and missing most of the oral presentation. I have had a chance to review some of the testimony and I have some questions.

I want to ask, when responses are given to the questions I'm about to ask, that they be placed in a context that goes beyond the question of the immediate legislation in terms of trade, because I understand the debate that we can have over whether or not this should be included in trade legislation. I personally favor including DAT legislation in the trade bill, but ultimately the jurisdiction of the committee here is the copyright jurisdiction and it's the longer term question of how we should deal with the problem of copying that I am interested in. I think we will be best—I certainly will be best helped if at least that context is understood.

Mr. Feldman, I reviewed briefly your written testimony. I want to understand clearly what you had to say about the technological specifications that are currently being used with respect to these machines and the digital recording media.

As I understand it, the specifications which are a voluntary agreement among manufacturers—first of all, we're talking about voluntary agreements among your conference of manufacturers?

Mr. **Feldman**. That's correct.

Mr. **Morrison**. Those are all Japanese manufacturers?

Mr. **Feldman**. No, sir.

Mr. **Morrison**. What other manufacturers are involved?

Mr. **Feldman**. The DAT conference consisted of some 80 manufacturers both Far Eastern, European, and domestic. I can't name all 80, but, as I understand it, there were some 60-odd Japanese manufacturers involved. The rest were European, American, Korean, all parts of the world.

Mr. **Morrison**. Those non-Japanese manufacturers currently possess the capacity to produce DAT or not?

Mr. **Feldman**. Some of them do, and it's my understanding that they would not be given the technology to develop those or create those machines unless they abided by the standard——

Mr. **Morrison**. So they would have to get the technology from the Japanese manufacturers?

Mr. **Feldman**. That's correct.

Mr. **Morrison**. I see. OK. Well, apparently the decision was made by this conference to so encode the reading mechanisms of the machines that they would not be able to tape digital to digital; is that——

Mr. **Feldman**. Both the software and the hardware. In other words, a certain flag or digital flag has to be put into the software to inhibit the ability of the DAT recorder to record; that's correct.

Mr. **Morrison**. And these are the manufacturers of the software and the manufacturers of the recording mechanism on the software who are determining both?

Mr. **Feldman**. That's correct.

Mr. **Morrison**. So there was a concern that there was a problem with digital-to-digital copying?

Mr. **Feldman**. Yes, they felt that this would not be a fair and legitimate taping operation, simply because that would produce a sort of clone or a perfect copy, as it were, whereas a digital-to-analog-to-digital recording which is the way all recorders essentially have worked in the past, would not produce a perfect clone.

Mr. **Morrison**. Mr. Ferris, I'd like to go beyond that, to ask this: in other words, a decision has apparently been made in the private sector at the moment that there is a problem with the potential copying issue that arises with the digital taping equipment. Is that a fair conclusion?

Mr. **Ferris**. I think you could conclude that. I disagree with that particular conclusion personally, Congressman Morrison. I think the DAT conference had manufacturers who had software interests and hardware interests. I think they recognized the fact that is continuing today as reported in the trade press, that the software industry, the recording industry worldwide is threatening a boycott of the DAT machines. I think they prefer not to have boycotts. I think it was the recognition of that, and I think they also felt that the degradation that would come from going to the analog circuit would still produce a quality recording that would be a top of the line that could be obtained certainly with the best analog equipment today. But there would be no ability to have a digital clone and raise the concerns that Mr. Berman has raised, that you would have Al Capp's shmooze proliferating ad infinitum around the countryside and around the world.

That was a concern that would really not affect significantly, I think, the home taper, but I think that's a concern that was raised, and in view of the boycott, that was the DAT conference. I don't think it was necessary because I think the dynamics of home taping is such that if you had digital-to-digital taping, it would not affect at all the dynamics of home taping that occurs, which I don't think is a drain on the recording industry at all.

Mr. **Morrison**. Well, I'm left a little bit at sea here about what the position is. Your testimony goes to some length in relying upon the presence of this coding mechanism which would prevent certain kinds of copying. We are urged to rely on this fact in making our judgment about whether or not we should go further. Now when I ask you whether you think copying is a problem and we need it, you say, no, you really don't agree with that.

Mr. **Ferris**. I'm just saying if you think there is a problem—and I don't personally think there's a problem—but if you think there is a problem, Congressman, this design of this DAT machine to prevent a digital-to-digital copy, to require an analog input and only be able to make, in effect, an analog source copy, that should satisfy those that have a concern because it has built into it a degradation by going to the analog circuit.

I simply don't think that the dynamics of home taping and how it's used and how this would be used in the whole scheme of home taping would have any impact at all if it went digital to digital, but if those that disagree with me—and Mr. Berman does and obviously you do—this should satisfy you.

Mr. **Morrison**. I guess my question is, If we were to agree with you that this is the place that the line should be drawn, that is, that the copying problem—or agree with whoever decided that this was the right place to draw the line because of the politics or the technology, or whatever, if we were to agree with you, then what would be the problem, then, in putting that kind of a restriction into law as opposed to relying on a private sector agreement to continue to do it?

Mr. **Ferris**. I think it—my only concern would be, Congressman—and I'm sure you would have concerns as well—there probably is danger from the standpoint of taking a snapshot of technology and enacting it into law. There are significant implications downstream as to how technology will develop and whether you're going to freeze a particular technology into place. We've had examples of that before——

Mr. **Morrison**. Just let me try to be clear on my question. I don't mean to put into law the particular technological specification, but the restriction that would say that no piece software and no piece of hardware could be sold which allowed digital-to-digital taping. In other words, if that is your judgment, the judgment of the conference, that that's a line that should be drawn, should that line be in the law, then, and, if not, why not?

Mr. **Ferris**. I think the philosophical problem of freezing the particular technology and putting it into law—we've had unfortunate circumstances in the past of doing that and unintended consequences of doing that in the Congress historically.

I think that since all the manufacturers who have this technology, who are going to be making DAT's certainly over the next 4 or 5 years, have agreed to this conference, and therefore no machine will be made without those particular provisions, without that incapacity, we'll be able to see if the historical data of these machines as they are introduced into the United States in that period of time indicates if there is a real problem, then I think you can do something legislatively. I am sure that after that 4- or 5-year period you'll find out that these machines fit right into the home taping dynamics, have no impact at all on the profits of the recording industry, and probably do not even need to have that conference complied with.

Mr. **Morrison**. You and I probably disagree about what would fit right into the current taping circumstances, where we come out on that question.

Mr. Berman, you wanted to comment?

Mr. **Berman**. I found little comfort in Charlie's original statement. I find less comfort in it now—to know how vigorously he opposed the conference standard. There exists today a technology which harmonizes the sampling rates. So this technology exists.

Mr. **Morrison**. Have you submitted that?

Mr. **Berman**. I haven't. I would be happy to do so.

Mr. **Morrison**. Mr. Chairman, could that just be submitted for the record?

[Material placed in subcommittee files.]

Mr. **Berman**. We know for a fact that Hitachi and Sharp have developed previously prototype machines that harmonize the sampling rates. I can't, for the life of me, understand why if, in fact, the machine is to be built that way, it couldn't be codified into U.S. law.

I'm troubled by the notion that the conference standard would be so stringent as to offer us protection when I'm uncertain as to whether the manufacturers have the patent control that would extend to the Koreans and the Taiwanese who ultimately will have the low-end machine.

I think conceptually it's an interesting concept, but I don't find enough comfort in it simply in terms of its being a self-fulfilling prophecy. I find less comfort in it knowing that Charlie is opposed to it.

Mr. **Morrison**. Mr. Chairman, I have other questions, but I think I would prefer to give you and Mr. Kastenmeier an opportunity to question.

Senator **DeConcini**. Representative Morrison, I have a number of questions myself but, due to our time restraints here, I'm going to submit most of them.

You touched on the question I wanted to take up—you not only touched on it, but you went into great detail with Mr. Ferris. It seems to me from my experience here that this is the first time we have come across the voluntary acquiescence or sensitivity of the recording industry to the potential problem. I say "potential." To me, that's encouraging—that you have agreed, for whatever reason, that this can be a problem and that you are not interested in creating a system that is going to multiply tapes for anything other than home use. That's a position I have consistently taken and felt comfortable with.

I am concerned, as Representative Morrison is, as to that being a position. We hate to come down on you any harder, because I compliment you for being sensitive to the recording industry and the copyright issue here, but why not legislate it? Why not do something, then? It seems to me it's a perfect opportunity for the two industries to say, yes, let's do that here; let's draw the line here because that's not our intent, and we still have been able to prevail in Congress to keep the recording industry from succeeding of taping analog or any kind of royalty or any kind of chips, or what have you. I appreciate your line of questioning and they were pretty well answered.

I do want to ask Mr. Berman: if you had your druthers, the RIAA, would you prefer a royalty or a technology solution to this home taping problem?

Mr. **Berman**. We are supporting the CBS copy-code scanner, Mr. Chairman.

Senator **DeConcini**. You are?

Mr. **Berman**. Yes.

Senator **DeConcini**. OK. As long as there are no DAT machines capable of producing a digital copy from a digital original, how is the copying that could take place with a DAT machine any different than the copying that goes on all the time on the conventional analog machine?

Mr. **Berman**. I'm sorry, are you——

Senator **DeConcini**. Well, if there are no DAT machines capable of producing a digital copy from a digital original, based on what we're seeing here, voluntarily putting all that in there now so they're not going to be able to do it, how is the copying that could take place with a DAT machine any different from the copying that goes on all the time with a conventional analog machine?

Mr. **Berman**. First, the nature of this voluntary system, again, is very suspect because I think it's easily defeated. We know for a fact that converters dealing with the sampling rate already exist. The flag code can be defeated.

As to the problem raised by a DAT machine that cannot copy direct digitals, what would happen, quite frankly, is that current analog recordings would be put on DAT and, in effect, you would have a perfect copy of that analog recording, and that copy could, in fact, continue to make perfect copies.

Senator **DeConcini**. That's the——

Mr. **Berman**. I would ask David to respond as to what the quality of that copy would be.

Senator **DeConcini**. That was my next question: how good would that be? Is it going to get better by putting it on a DAT?

Mr. STEBBINGS. Mr. Chairman, it would certainly get no worse. It wouldn't actually be improved if it started off as an original analog recording, but the contention of Mr. Feldman that doing a digital—analog-digital recording would seriously degrade it, I find very unfounded.

Furthermore, after that tape recording has been made, presumably the DAT machine would not be picking up the flag code and could then clone from then on. And, in fact, earlier—the second demonstration of Mr. Feldman showed two digital DAT's protected by a flag code which stopped the recording, and I would like to invite him to use my 75-cent lead and play the output of one DAT machine and make a recording in spite of playing software which he said had a flag code, and showing that the second DAT machine could, in fact, still make a recording—and for us to listen to whether there is, in fact, a very large loss in quality, which I don't believe there will be.

Senator DECONCINI. Mr. Feldman.

Mr. FELDMAN. The point I was trying to make was that the technology of doing the digital-to-analog-to-digital recording, such as will be possible with DAT, will be not be audibly that superior to what has been possible with a $3,000 Nakamichi high-end tape deck today. It was also a very, very fine recording, so that the argument could be made that even today's technology can be used to make copies if one chooses to do so.

I'm not suggesting that one cannot make that type of copy, as Mr. Stebbings has indicated. I am simply saying that this is just a further advance in the state of art. The whole world is going digital.

Senator DECONCINI. I understand.

Chairman Kastenmeier, do you have further questions?

Mr. KASTENMEIER. Just one or two questions.

The provision, Mr. Berman, that the Commerce Committee acted on provides for a 1-year moratorium, I think, or——

Mr. BERMAN. That is correct, Mr. Chairman. It was revised.

Mr. KASTENMEIER. What do you anticipate, assuming that becomes law, what do you anticipate after 1 year? What is it you hope will happen within the year?

Mr. BERMAN. I hope that through your good graces, the first step today, that the committees will continue to look at the home taping problem, the issues that were raised today, and to see if, in fact, there is not a solution available to us. That would be my hope in the 1-year period, Mr. Chairman.

Mr. KASTENMEIER. Could you be more explicit as to what you think the solution is?

Mr. BERMAN. I said earlier I believe that the permanent solution is, in fact, the copy-code scanner.

Mr. KASTENMEIER. You said not royalties or——

Mr. BERMAN. I was asked by Chairman DeConcini if I had my preference, and my preference was for the copy-code scanner. We have had a kind of tortured history involving royalties and I am somewhat amused by the fact that they reappear here today, and I wonder if it is not part of some grand strategic plan on the part of the other side. I welcome it, but still, if I had my druthers, Mr. Chairman, would accept the scanner.

Mr. Kastenmeier. A copy-code scanner, would you apply that technology to analog tape recorders?

Mr. Berman. Currently my view is that it would be applied only to digital recordings.

Mr. Kastenmeier. Only to digitals?

Mr. Berman. Yes, sir.

Mr. Kastenmeier. Thank you, Mr. Chairman.

Senator DeConcini. Representative Lungren, do you have any opening statement you'd like to put in or questions?

Mr. Lungren. No, Mr. Chairman.

Senator DeConcini. Congressman Morrison, we'd be glad to entertain another short question or two. We do have another panel I'm trying to get to, but you're doing good work.

Mr. Morrison. Yes, Mr. Chairman, I'll be very brief.

I really have two questions for Mr. Ferris. The first, I guess, is if we could step another couple of steps back—and I realize that this is big money business that you're all in out there, and dealing with who's hurt and who's benefited, but just take another step back. Is it your view that copying of copyrighted works is not a problem that we should be visiting and revisiting as technology changes, changes the balance of what it is that—the balance that we're trying to strike between consumers and producers or is copying a problem in the area of electronic property, and copyright in particular, that we have an obligation to be looking at constantly with respect to changing technology?

Mr. Ferris. I think the historical distinction that the copyright law has made, Congressman, between those that copy for profit and for commercial gain, they are violators of the law subject to prosecution, and those that copy at home for private, where personal use is not a violation of the copyright law; is a distinction that has held up extraordinarily well, and nothing in the new technology can disturb that distinction at all.

Unlike Mr. Berman who said when he was in the Senate staff in 1971 he was unaware of the Sound Recording Act's addressing this particular question, I read here from the House report—and it might have been that the Senate staff then didn't take cognizance of the House. [Laughter.]

But it says specifically in the House report:

> Specifically, it is not the intention of the committee to restrain the home recording of broadcasts or from tapes or records of recorded performances where the home recording is for private use with no purpose of reproducing or otherwise capitalizing commercially on it.

That was the statement in 1971. I think it has validity today, and I think all the home taping that occurs has a stimulative effect on the buying habits of those that are into the home taping scene.

Mr. Morrison. Let me just follow up on that because there seems to be a lot of ground between your two sides of that dichotomy; that is, the commercial use and the private, personal use. Where do you put the people who are being appealed by the advertisements that say, "Build up a tape library. Beat the system." Is that private, personal use, or is that commercial advantage? Apparently someone is expecting not to have to buy the initial tape, but is somehow going to borrow or rent or in some way acquire it from somebody else and build up a tape library and beat the system, which are things that manufacturers have been saying about double-headed recorders and the like for quite a while now.

Mr. **Ferris**. I think that one can't control how a retailer is going to advertise.

Mr. **Morrison**. How about a manufacturer?

Mr. **Ferris**. If a manufacturer did—I don't think it would be a violation of the law if you attended to stimulate a direct need to buy a system to encourage the hobby of generating a music collection. If I do generate a music collection, and I buy a particular album and I make a tape of that album, I think that benefits the recording industry because I buy the album, but more so I think it gets me more interested and committed so that I buy more music.

I think the studies before these two committees are full of examples and statistics which demonstrate those who do the most home taping are those that do the most purchasing of prerecorded music.

You take all the uses of tapes and tape recording machines, Congressman——

Mr. **Morrison**. Charlie, I don't think you're really answering my question because I guess you have never been to a college campus; but the way this is done is people buy one and they tape for a whole floor. What I'm just asking you—and if you could just give me a——

Mr. **Ferris**. I think it's part of the ordinary and accepted human conduct to want to borrow and lend goods within family and among friends, and I don't think that Congress should interfere——

Mr. **Morrison**. So that's in your definition of personal and private use?

Mr. **Berman**. The circle is getting wider.

Mr. **Ferris**. If it's not for commercial gain, if you don't sell it and make any money from it, I think——

Mr. **Morrison**. So if you barter for the benefit, that's not a commercial event?

Mr. **Ferris**. If you what?

Mr. **Morrison**. Barter for the benefit. In other words, if you get things back for it of value, that's not commercial advantage in your view—in other words, you get somebody else's copy?

Mr. **Ferris**. I'm sure that if you entered a bartering arrangement in certain situations you could cross the line and become commercial behavior. If it really was for commercial gain of the individual involved, the circumstances would control, I am sure you could cross the line and become a pirate, and that's against the law. But I think when you attempt to restrict my teenagers and your teenagers from exchanging music among themselves and declare them criminals, I think that that is drawing the line unfairly——

Mr. **Morrison**. We might be able to do something other than declare them criminals.

Mr. **Berman**. Mr. Morrison, can I respond to that? I would draw the line at declaring them criminals as well, as the father of three teenage daughters.

Here's a piece from Dorm Magazine:

> Making Tapes Off the Record. How to make the highest quality recording while increasing your music collection cheaply. With the abundance of record collections in the dormitory, college is the perfect place to expand a personal music collection by copying a friend's album on cassettes.

Mr. MORRISON. Thank you very much, Mr. Chairman.

Senator DECONCINI. Thank you.

Mr. Berman, let me just end my questions with this: if you had your druthers, would you go back to the old system in which the only form of recording music was the phonograph record?

Mr. BERMAN. No, Mr. Chairman. Our industry has lived with multiple configurations for many years, and, in fact, it is doing so right now.

Senator DECONCINI. So would you conclude that you've been better off because of technology and the advancement in the recording industry to record your product?

Mr. BERMAN. Mr. Chairman, we'd be a lot better off if there were no home taping.

Senator DECONCINI. That wasn't the question. You do agree that the technology of playing your product has enhanced your industry?

Mr. BERMAN. In some respects. Let me point, however, because we've heard a lot about the compact disc, that the compact disc is a growing configuration within our industry, but at the very same time that it is growing other configurations are disappearing, so that the total number of units in terms of prerecorded music has remained basically static over the years.

Senator DECONCINI. But the industry has prospered and done well. Is that due to your technology, too, of how you record?

Mr. BERMAN. I wouldn't accept, Mr. Chairman, the notion that the industry has prospered and done well. It has on occasion and it hasn't on occasion.

Senator DECONCINI. How is it doing today?

Mr. BERMAN. 1986 was a reasonably good year.

Senator DECONCINI. I have a number of questions from Senator Hatch that I will submit to the witnesses as well as a number of my own, because we have another panel. I will yield to Chairman Kastenmeier if he has any other questions.

Mr. KASTENMEIER. I have no further questions. I, too, would like to ask further questions, but I think time is of the essence.

Mr. LUNGREN. I just have a comment. I'm, I guess, like a lot of members—I'm sort of in between on this as to what we ought to do, if anything, and how to do it. It just reminds me, however, of another issue that doesn't seem to have anything to do with it, but it's currently before the Congress. That is raising the speed limit from 55 to 65. I find with my own constituents that they have a bit of a hypocritical view of Members of Congress or the Congress in general when we establish that people cannot abide and that Members of Congress apparently don't abide. I've seen more than my share of fellow Members going over 55, including this one speaking right here.

I think in whatever we do we ought to make sure that we don't create a law that will be easily and generally violated, because I don't think that serves any purpose whatsoever. I've had occasion to hear more than one conversation of Members of Congress talking about tapes they have in their own private libraries.

As we look into this, I hope whatever solution we have, if there is a solution possible, it is one that is not easily violated and one that doesn't put us in the same position of looking a little silly and bring a little disrespect for the law. We've got enough disrespect for the law as it is now.

Mr. **Berman**. I'm sensitive to that, Mr. Lungren, and I think it's an issue that Chairman Kastenmeier raised in terms of the fundamental copyright question we're trying to address.

Mr. **Ferris**. I think, Congressman, that when you cross that bridge, though, between commercial gain from home taping and over into private, personal use, you are getting on that slippery slope. I think you're getting into the area where you are raising questions about criminality of conduct, about people who are doing what historically has been permitted and declared as lawful and legal. I think that the concern you raise about the respect for the law and declaring activity which has become a custom and certainly a benefit to the recording industry—declaring that and raising questions about its legality I think does have the implications that you raise.

Senator **DeConcini**. Any other questions? Any members.

Thank you, gentlemen. Let me compliment you for your give and take. It's very helpful to have both sides of the issue here, I think, so that you can go back. There's the hand shake, folks. [Laughter.]

Thank you.

We now will go to panel 2. We will have Ralph Oman, Register of Copyrights. Mr. Oman has been a Register of Copyrights since 1985. He's a veteran, serving as chief counsel of the Subcommittee on Patents, Copyrights and Trademarks prior to his appointment. Also, we have Mr. Fred Weingarten, program manager of the Communication and Technology Program at the Office of Technology Assistance. Mr. Weingarten is widely recognized as an authority on information, policy, and academia and has a long list of accolades that we will forego just because of time.

Gentlemen, thank you for being so patient. We're sorry we didn't get to you a bit sooner. We do have some time constraints. Your full statements will appear in the record as if read.

If you would summarize those for us, that would be very helpful.

Gentlemen, welcome back to the Hill. It's never been the same without you. We used to have a well, super-run committee. Now we just have a super-run committee, but we're glad to have you here.

STATEMENT OF HON. RALPH OMAN, REGISTER OF COPYRIGHTS AND ASSISTANT LIBRARIAN FOR COPYRIGHT SERVICES

Mr. **Oman**. Thank you, Mr. Chairman, Chairman Kastenmeier, Members.

It is a pleasure to be back. To continue Senator Leahy's boxing metaphor, let me note that normally on a boxing card you start with the preliminaries and then move on to the main event. You've reversed the order, and I hope we don't come as an anticlimax.

In any case, it is a pleasure to be here to testify before this extraordinary joint hearing.

The Copyright Office has submitted for the record a statement that I hope you find useful. I would like to explain briefly my view of S. 506 and H.R. 1384 and then take your questions.

My written statement reflects some of the Copyright Office's ambivalence over the wisdom of using copy-code scanners to deal with the problem of private copying of compact disks onto digital audio tapes.

As you all know only too well, the home taping issue is a tough one. It's hard even to reach a common understanding of the facts. In the world of analog recording Congress has repeatedly declined to accept the pleas of industry for compensation to deal with obvious, but hard to quantify, economic losses. Still, Congress indirectly recognized the threat of home copying to audio works, especially with regard to compact disks back in 1985—or 1984, I guess it was—when we enacted the record rental amendment.

Going back to the early 1960's, the Copyright Office has long supported a system that would pay songwriters and record companies for lost sales from excessive private copying. We have never supported an effort to outlaw private copying. We respect the views of consumers who see the opportunity for some private copying as an aspect of their personal freedom. We also recognize their political clout in Congress.

So, instead of urging Congress to impede the freedom of consumers to enjoy the fruits of technology, the Copyright Office has always urged you to make it contingent on justice for the creators. That is why we have preferred a royalty solution to the entire home taping problem, and that is why we prefer a royalty solution to the DAT problem. I say that without admitting membership in any royalty conspiracy.

I'm sure many of the people who argue in favor of the pending bills would in their hearts prefer a royalty-based solution if it were all encompassing, but they see that the trade boat to paradise is about to leave the dock and they want to be on it.

Congress could fashion a royalty solution on DAT that embodied the careful compromises between property rights and user privileges that you interwove into the Copyright Act back in 1976. Still, I think we have to be realistic, and the DAT threat is real and imminent.

Congress can't ignore the fact that a failure to act means that Japanese electronics manufacturers will reap huge profits for America's open markets while our composers, musicians, and record producers get the moral equivalent of a stick in the eye.

Even with these time pressures, Congress could take a hard and quick look at the surgically precise royalty solution applied only to DAT. It would solve the immediate problem and put aside for another day the larger, home taping controversy.

A royalty-based copyright solution would avoid some of the uncertainties raised by these bills. The biggest uncertainty is, what will happen? Will we see copy-code scanners accepted and widely distributed in the United States and elsewhere? Not necessarily. The Japanese could ignore the copy-code scanner and sell machines all over the world except here without the scanners in place. True, the Common Market is thinking of steps similar to those proposed here, but many European countries have already put a royalty system in place, and that's a complicating factor.

The point is, Americans could be denied the new technology and Congress could be left to stew in its own juice, as pressure mounted for a repeal of what would effectively be a ban.

If the manufacturers decided that they couldn't let the United States market lie fallow and built in the copy-code circuitry, it's hard to say whether DAT hardware would sell with this cloud hanging over its future. The sunset provision would add to that problem. Who wants to buy a recorder with a copy-code device if the prohibition thereof is going to end in 1 year or 3 years? Why not wait and get a better machine without the spoiler?

I raise these issues as a way of suggesting that maybe in the long term a royalty solution would be the best for everyone, including American consumers. They could be convinced to take a broader view of their own self-interest. They, too, suffer because of the many uncertainties that have been mentioned here this morning.

We're not sure whether or not the copy-code notch will degrade the sound, and the consumer can't buy prerecorded DAT cassettes. Worst of all, because of the copyright uncertainties and because of the expected political fallout, the Japanese Ministry of International Trade and Industry [MITI] jawboned the Japanese manufacturers and forced them to purposely degrade the quality of the DAT recorder so that they could answer the hard copyright question.

If a royalty system were in place, the American consumer could get the best DAT technology a human mind has been able to devise so far. Instead, by opposing a royalty, the American public will wind up with a recorder that forces pure and perfect digital sound through an unnecessary electronic loop, the loop from digital to analog and back to digital, solely for international political purpose. It just doesn't make sense.

Of course, if Congress decides to move these bills or bills similar to them, I would feel much better about having taken so important a step if you kept it clear that it was an interim solution. With a sunset provision that mandated a comprehensive report to Congress on the impact of the ban, we could still consider a long-term copyright solution. A stop gap measure would at least keep this ban from becoming a troublesome precedent for other copyright disputes.

This leads me to my last point. A hard copyright problem is driving us toward the limited use of a very rigid technological constraint. The House and Senate copyright subcommittees, always trying to balance the rights of the author with the consumer's desire for unfettered use, have critical roles to play in the DAT controversy. I'm thankful to be testifying here today before your subcommittees rather than before the Ways and Means Committee or the Finance Committee.

As always, you've got to weigh these proposals which will, in fact, alter the practical meaning of copyright in our country while keeping an eye on the public interest—not an easy task. But the Copyright Office is here to help if it can, and I would be pleased to answer any questions.

Thank you very much.

[Mr. Oman's submissions for the record follow:]

Statement of Ralph Oman
Register of Copyrights and
Assistant Librarian for Copyright Services

Summary

Senator DeConcini, Chairman Kastenmeier, and members of the Subcommittees, it is a privilege to appear before you today at this joint meeting of the House and Senate Subcommittees to talk briefly about digital audio taping legislation.

The digital audio tape (DAT) recorder, expected to be distributed in this country shortly, is capable of making perfect copies of compact discs and other phonorecords on to digital audio tape. The introduction of this recorder may mean that private or home coping, already pervasive, will become as great an economic threat to copyright proprietors as commercial piracy.

For the past five years Congress has considered legislation that would in effect enact a compulsory license for home taping by placing a royalty on the equipment or the tape. Recent legislation moves away from the compulsory license/royalty approach to a technical solution by permitting the importation of DAT recorders that contain a guard that prevents copying. Two types of legislation have been proposed. One, S. 506 and H.R. 1384, would require incorporation of copy-code scanners into all digital audio taping recorders to prevent the copying of copyrighted sound recordings. The other legislation also requires the incorporation of a copy-inhibiting device in DAT recorders as part of larger proposals on the regulation of commerce and trade.

It should be noted that various copyright groups attempted to get manufacturers to voluntarily place a scanner in DATs before seeking legislation on the national and international level. It is clear that the opposing parties are unable to come to any voluntary agreement. The problem will not go away. It is up to Congress to decide whether mass private reproduction of copyrighted works by means of digital audio tape recorders should be permitted.

This legislation offers a temporary technological solution to the unauthorized and uncompensated taping of copyrighted sound recordings. It does so by requiring that digital audio tape recorders contain copyguard devices known as scanners before they can be distributed in this country. It also prohibits the offering of any service that would deactivate DAT scanners and the deactivation of a scanner by any individual.

The Copyright Office has long believed that the equitable solution to the problems for authors arising out of home recording is a royalty solution. Such a solution is even possible in the limited DAT context. Our reservations over the proposed copy-code scanner bills concern their untested relationship to the balance of user-proprietor interests in the 1976 Copyright Act. Faced with the imminent arrival of DAT on the marketplace, the Office can only reluctantly endorse these proposals, with a sunset provision.

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Senator DeConcini, Chairman Kastenmeier, and members of the subcommittees, it is a privilege to appear before you today at this joint meeting of the House and Senate Subcommittees to talk briefly about digital audio taping legislation. The pending bills represent a new response to the technological developments that threaten to encroach upon traditional intellectual property rights.

The DAT recorder, expected to be distributed in this country shortly, is capable of making perfect copies of compact discs and other phonorecords on to digital audio tape.

S. 506 and H.R. 1384 would require incorporation of copy-code scanners into all digital audio taping recorders to prevent the copying of copyrighted sound recordings.

Other bills -- H.R. 1155, S. 539, S. 635, and H.R. 1603 -- also require incorporation of a copy-inhibiting device in DAT recorders as part of larger proposals on the regulation of commerce and trade.

I. BACKGROUND

In one significant respect the Digital Audio Recorder Act of 1987 is similar to legislation first introduced in the 97th Congress. The earlier home taping bills and the pending DAT bills both address the problems raised by the private copying of copyrighted materials without securing permission or compensating the copyright owner. Generally, those who support this legislation assert that private copying is not really a noncommercial use since it deprives the rightsholder of royalty income in the same manner that commercial piracy does. Those who oppose this legislation will likely argue that the use is not commercial and does not harm the copyright proprietor, because home taping does not necessarily displace a sale.

A. The Home Taping Issues Unresolved by Betamax

Congressional interest in home taping arose during litigation of the well-known Betamax case.[1] In 1981 the Ninth Circuit held that off-the-air copying of telecasts of copyrightable audiovisual materials by owners of videotape recorders in their own homes for private, noncommercial, use constituted infringement of copyright and was not exempted by the fair use doctrine. The Ninth Circuit, in expressing its conviction that fair use did not sanction home videorecording, noted that (1) the copying of entertainment materials was clearly not a nonprofit educational use; (2) the materials copied were not the informational kind and therefore were not subject to a possibly greater scope of fair use; (3) the entire work was usually copied; and (4) home recording tended to diminish the potential market for copyright owners' works.[2]

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[1] This case was not settled by the Supreme Court until 1984, see Sony Corporation of America v. Universal City Studios, Inc., 464 U.S. 417 (1984), rev'g Universal City Studios Inc. v. Sony Corporation of America, 659 F.2d 963 (9th Cir. 1981), rev'g 480 F.Supp. 429 (C.D. Cal. 1979).

Three years later the Supreme Court reversed the Ninth Circuit and held that the sale of videorecorders to the general public did not constitute contributory copyright infringement. The Court agreed with the district court's finding that time-shifting for private home use must be characterized as a noncommercial, nonprofit activity. Moreover, the Court was convinced that since the television audience had been invited to watch the entire program earlier, reproduction of the entire work does not have its "ordinary effect of militating against a finding of fair use."[3]

In effect, the Betamax opinion is limited to off-air copying on a videorecorder by private individuals for showing of the taped material within the home at a more convenient time. The Court did not directly address off-air taping of cable transmissions and subscription television, nor the case of taping for purposes of "librarying."[4]

The practical effect of the decision, however, has been to leave unimpeded the full range of personal, private copying engaged in by television viewers. There is no prospect of litigation to explore afresh the potential interstices of the Betamax case. The problem is squarely before the Congress.

B. Attempts to Provide a Legislative Solution

During the years between the appellate and Supreme Court decisions, Congress grappled with the thorny problems presented in the Betamax case. In 1982 a number of home taping bills were introduced in the 97th Congress. Several of these bills (S. 1758, H.R. 4783, H.R. 4994) exempted home video recorders from copyright liability whenever copies were made for private noncommercial use. Amendment 1333 to S. 1758 and H.R.

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[2] 659 F.2d 963, 969-974.

[3] 464 U.S. 417 at 450.

[4] The only reference to librarying is found at note 39, p. 453.

5705 provided an exemption for both audio and video recording but based this exemption on the payment of royalties on both the recording devices and the blank tapes used to make the copies. These later bills (Amendment 1333 to S. 1758 and H.R. 5705) attempted to resolve in one package all of the problems related to home taping.[5] Hearings were held on the home taping bills introduced in the 97th Congress in both the House and the Senate. A great deal of attention was also given to these issues in the press, especially since the Supreme Court was preparing to hear the Betamax case.

One might have expected the bills introduced in the 98th Congress to reveal compromises to accommodate the divergent views presented in the 97th Congress; however, a blanket exemption was again proposed in both houses. H.R. 175 (S. 175) exempted home video recorders from copyright liability whenever the copies made were for private noncommercial use. It did not cover audio home recording. Proponents of protective measures introduced: S. 31 (H.R. 1030) which covered both home video and audio recording devices and media and was referred to as the Home Recording Act of 1983; S. 32 (H.R. 1027) which covered the rental, lease, or lending of sound recordings; and S. 33 (H.R. 1029) which covered the rental, lease, or lending of motion pictures and other audiovisual works.[6]

In the 99th Congress, video home taping all but disappeared as an issue. Two audio taping bills were introduced in Congress, but did not pass. The 99th Congress also explored, as discussed below, a technological rather than a compulsory license[7] solution.

The question of whether audio home taping is an infringement of copyright has not yet been presented to an American court.[8] In a 1982 article Professor Nimmer asserted that the Copyright Act contains no exemption from copyright liability for audio home taping.[9] Nonetheless, the practice of making such tapes on audio cassettes for private use is now widespread. For that matter, there is no exemption in the Copyright Act for video home taping in general. The Supreme Court sanctioned the time shifting purpose of video home taping as a fair use, but observed that Congress may "take a fresh look at this new technology ...." That is what you are doing here today as you examine the digital audio recorder that makes perfect copies and the legislation that attempts to provide a balance between the interests of consumers and the interests of copyright holders in the light of new technological developments and to make that balance compatible overall with the 1976 Copyright Act.

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[5] Section 5 of Amendment 1331 to S. 1758 also would have created a commercial lending (rental) right in motion pictures and other audiovisual works and sound recordings, by narrowing the scope of the present "first sale" limitation on the public distribution right.

[6] Although the 98th Congress did not pass any legislation that covered home taping, it did pass the Record Rental Amendment (S. 32, H.R. 5938). This bill became law on October 4, 1984. Pub. L. No. 98-450, 98 Stat. 1727 (1984).

[7] The compulsory license was proposed in legislation which would allow home copying but would impose a royalty on the equipment and the tapes.

C. Recent Technological Solutions.

Given insufficient support for providing compensation for home taping through a compulsory license and waning interest in the issue post-Betamax, copyright proprietors looked for a technological solution. CBS revived hope for some protection against copying when the CBS Laboratories developed technology that would prevent unauthorized copying on digital audio tape recorders. CBS's copy prevention system would encode all recordings that are to be protected by removing a "notch" from certain frequencies. A decoding device or scanner would be built into each DAT recorder. When the scanner senses an encoded portion of the phonorecord being recorded, it turns off the system for several seconds. Obviously, a tape with a series of half minute interruptions throughout is worthless to the consumer who would otherwise be able to make a perfect copy of the original recording.

These developments were discussed before a full Senate hearing on

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[8] Before Parliament placed a royalty on recorders in 1965, the German courts litigated the question of whether private taping was an infringement of copyright. Seemann, "Sound and Video-Recording and the Copyright Law: The German Approach," 2 Cardozo Arts and Entertainment L. J. 225, 249-253 (1983).

[9] See, Nimmer, "Copyright Liability for Audio Home Recording: Dispelling the Betamax Myth," 68 Va. L. Rev. 1505 (1982).

S. 1739 on August 4, 1986. At that time Donald J. Quigg, the Commissioner of Patents and Trademarks, testified that the Administration preferred a technological solution to home taping.

Late in the 99th Congress, Senator Danforth introduced S. 2842, the Digital Audio Tape Tariff Act of 1986. This bill was drafted to encourage Japanese manufacturers to include a copyguard device in digital audio tape recorders. The Danforth bill, would have provided a significant tariff differential in favor of equipment carrying the chip by imposing a 35% tax on DAT recorders without copy-code scanners compared to a 4.1% tariff for recorders including the chip. The bill did not pass.

In December, 1986, meetings were held between the International Federation of Phonogram and Videogram Producers (IFPI) and the Electronic Industry Association of Japan (EIAJ) to enlist the support of Japanese manufacturers for legislation that would require technological protection of copyrighted recordings. When IFPI was unable to persuade EIAJ to support its position, IFPI took its case to the European Economic Community (EEC) and asked the EEC to establish mandatory requirements in its member countries. Even prior to the IFPI request, the EEC had informed the Japanese Ministry of International Trade and Industry (MITI) that a requirement for copy-code scanners imported into Common Market countries was likely to be imposed. The EEC Commission is now preparing a document to explore means of instituting this requirement throughout the Common Market.

Current efforts to provide a legislative solution to home taping follow the failure of IFPI and the Recording Industry Association of America (RIAA) to reach agreement with EIAJ, regarding whether these recorders will contain the copyguard devices. Proponents of protective legislation urge that now is the critical time to act, because DAT recorders are expected to be shipped from Japan shortly.

II. ANALYSIS OF PENDING BILLS

A. Gore-Waxman Bills

S. 506 (Gore), and H.R. 1384 (Waxman) require digital audio tape recorders to contain certain copyguard devices before they can be distributed in this country. These bills are based on Congress' power to regulate commerce -- not on the copyright clause of the Constitution -- and simply prohibit the manufacture, assembly, sale or other distribution of digital audio hardware without the copy-preventing device. The bills also prohibit the offering of any device or service that would deactivate DAT scanners, and specifically prohibit their deactivation by individuals.

Any aggrieved person, officer, or federal agency may enforce these requirements by bringing a civil suit against a violator of the act. The Gore-Waxman bills give the courts broad powers to grant temporary or permanent injunctions, and, except in the case where the United States is the plaintiff, to award costs and attorneys fees. The injured party may elect to receive (1) his actual damages as well as any of the violator's profits not computed in actual damages; or (2) minimum statutory damages of $1,000 or, in the alternative, $10 for each device or product involved. If the violation consists of providing services, the statutory award is two times the value of the services.

Devices found in violation of the act may be impounded, modified, or otherwise disposed of pursuant to court order. Willful violation for commercial gain is subject to imprisonment of up to two years with a fine of up to $50,000 or five times the retail value of the devices or services involved, but persons who deactivate their own equipment would not be subject to criminal prosecution.

The legislation authorizes the Secretary of Commerce to exempt by regulation specific kinds of digital recording equipment used exclusively for legitimate business purposes. Except for establishing rules for exemptions, the bills call for no new government administration. The bills are not explicit, however, about the nature of expected enforcement by the Government. Would the Customs Service or the International Trade Commission enforce the provision? Finally, the bills contain a three year sunset provision.

One way in which these bills would change the present home-taping environment would be, effectively, to declare that there was no such thing as fair use with respect to the private use of DAT machines. By rendering certain copying physically impossible these bills would mean that individuals could never avail themselves of fair use, no matter how well their intended uses fit within the scope of section 107 of the Copyright Law. I understand that these bills do not directly amend that law, but their effect will be substantial and should be considered as you weigh the merits of any trade or technology-related bill that has the capacity to affect the copyright marketplace.

B. Other Bills -- Regulation as Part of a Larger Package.

Shortly after S. 506 was introduced, the U.S. Trade Representative announced that President Reagan would propose copy-code requirements in trade legislation to improve the international economic environment. The administration bills are the Trade, Employment, and Productivity Act of 1987, (H.R. 1155 and its companion, S. 539). Senator Thurmond introduced the Omnibus Intellectual Property Rights Improvement Act (S. 635), and Mr. Roth introduced the Intellectual Property Protection Act of 1987 (H.R. 1603).

These four bills contain requirements for copy-code scanners in digital audio tape devices similar to S. 506 and H.R. 1384, but differ in several respects: 1) they prohibit the encoding of phonorecords that are not subject to copyright;[10] 2) they include sanctions for importation as well as violations in interstate commerce;[11] 3) they identify specific classes of persons as potential aggrieved parties, including copyright owners, importers and distributors of digital audio tape recorders;[12] and 4) they do not sunset after three years. In general, these bills provide penalties similar to those found in the Gore and Waxman bills except that willful infringers are fined in accordance with sections of Title 18 -- for example, under Section 3623, which under some circumstances could result in substantially higher fines.

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[10] H.R. 1155, and its mirror, S. 539; Sec. 3302(b)(3); S. 635, Sec. 132(b)(3); and H.R. 1603, Sec. 105(a)(3).

[11] H.R. 1155, Sec. 3302(f), also S. 539; S. 635, Sec. 132(f); and H.R. 1603, Sec. 105(e).

[12] H.R. 1155 and S. 539, Sec. 3302(a)(7); S. 635, Sec. 132(a)(7); and H.R. 1603, Sec. 105(f)(7).

III. ARGUMENTS ON DAT BY THE AFFECTED INDUSTRIES

A. Position of Proponents of Protective Legislation.

1. Digital tape recorders can produce high quality recordings from compact discs. The new DAT audiocassettes, half the size of conventional cassettes, offer portability and public familiarity with the configuration. Copyright proprietors urge that the introduction of the digital audio tape recorder in the American market will give consumers the opportunity to do the worst kind of copying: for the first time they will be able to make high quality recordings of compact discs.

Although the digital tape recorder gives the consumer the ability to take a sound recording in any format and reproduce it in the consumer's favored format: audio tape cassettes, recording companies are especially concerned about DAT's ability to reproduce CD's. For the first time, the consumer is able to reproduce a compact disc with CD quality. Several years ago the compact disc was hailed for the high quality of its sound, the result of digital capturing of sound in a noise-free environment. Any difference in sound between the CD and a DAT reproduction cannot be detected by the listener. Consequently, the compact disc itself, a digital recreation of sound, is threatened by unauthorized copying in the same way that conventional records have been.

2. Repeated copying does not cause digital audio tapes to deteriorate. DAT recorders can go on producing master copy quality because there is no deterioration in succeeding generations: the hundredth digital copy sounds the same as the first. DAT's can also preserve the quality of sounds in conventional phonorecords: these recorders will faithfully recreate the sound of the original from which the DAT cassette was made.

3. The introduction of the DAT recorder without a scanner will have a devastating effect on the American recording industry. RIAA, IFPI, and other proponents of the bill state that consumers will have little incentive to buy a phonorecord that can be made perfectly at home. Up until now, proponents point out, CD quality, which makes possible the production of music in a totally quiet sound environment, had to be purchased.

The capacity of the DAT recorders to make perfect copies from compact discs threatens to supplant the need for consumers to purchase discs or other formats, thereby depriving copyright owners of the sound recordings and the music of their only source of revenue: sales of records or tapes.

Additionally, the American recording industry has already made substantial investments in the CD format and is scheduled to invest even more. IFPI studies report that worldwide sales of prerecorded music on compact discs increased from 20 million units in 1984 to 61 million units in 1985. Considerable capital has been invested in 27 new plants -- 15 of which will open in the United States. The investors expected to recoup that investment in part by selling more than 600 million CD's worldwide in 1987, with at least a third of that number sold in the United States.[13]

4. No American industry is built around the DAT. The American recording industry has a considerable investment in compact discs and other sound recordings; no American industry has an investment in DAT recorders at this time. On the other hand, one of America's most precious commodities is its creativity, represented by the original authorship that composers, authors, performers, and sound engineers contribute to American sound recordings.

5. The DAT copy-code scanner is an inexpensive solution. The record companies who produce the recordings and the manufacturers of the DAT recorders have the technology available to provide the encoding information and the scanner without adding more than a miniscule amount to what the consumer pays. The cost of adding the scanners is estimated to be a mere $1.00 -- an insignificant amount when compared to the overall cost of DAT recorders, said to retail at about $1200. Any expense of encoding the recorded material would be borne by the copyright proprietor. The Administration supports a technological solution and has asserted that the administrative costs of policing the use of a scanner would be small. Additional enforcement costs would be borne by the private parties who litigate their rights in the courts. Proponents urge that the

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[13] "CD's: The Future Is Now," The Washington Post, February 11, 1987.

unwillingness of manufacturers to provide this scanner is further indication of their general unwillingness to cooperate or to protect copyrighted works.

6. No middleman is involved. Unlike the compulsory licensing solution, the proposed technical solution minimizes government involvement. It does not bring in a third party to collect or distribute royalties.

B. Arguments made by the Opponents.

1. There is no proof of harm. Opponents of the bill argue that there is no proof that DAT recordings will harm the recording industry or other copyright owners. On the contrary, they assert that as with the introduction of VCR's and other technological innovations, DAT's will offer copyright owners a completely new source of revenue. This argument is based on the assumption that the person who buys a DAT recorder will buy more recordings, *i.e.*, the more technological options a consumer has, the greater his or her expenditures on discs, tapes, and phonorecords. Furthermore, opponents note that a consumer would not necessarily buy a recording that he/she copies on the DAT recorder; in other words, the copying has not necessarily replaced a sale.

2. Consumers should be able to make copies to suit their private uses. Opponents of this legislation say that the consumer has long enjoyed the ability to buy one copy in a particular format and then make multiple copies in any other format to suit personal convenience. They urge that consumers should be able to change the configurations of CD's that they have already purchased in order to suit their private uses.

3. This legislation harms DAT manufacturers. If DAT is singled out as the only format where copying is prevented, opponents argue that these devices will be placed at a decided disadvantage. Consumers will be confused and wary of DAT recorders once they are aware of the limitations placed on only this format.

4. DAT will not discourage the purchase of CD's. Opponents of this legislation point to the "concession" DAT manufacturers made in equipping DAT recorders with the capability to copy analog sounds. This produces a product that is inferior to the CD, though some say,

immeasurably so. Opponents maintain that the purist who is truly interested in obtaining the sound equivalent of CD's will continue to buy the superior product.

5. The proposed legislation attempts to stop progress. Opponents argue that historically, authors and other copyright owners have attempted to impede technological progress by banning the devices themselves, *e.g.*, the videocassette recorder, and now digital audio tape recorders. Such efforts have failed in the past, opponents argue, and having no merit, should also fail here.

C. Dual-Inventory Proposal

Several proponents of a technological solution have suggested a dual inventory proposal that would allow consumers the option of copying. This would mean that recording companies would make and retailers would offer recordings with and without the encoder chip. Copyable recordings can then be offered to the consumer at a higher price than uncopyable recordings that contain the encoder chip. Commissioner Quigg made this suggestion at last year's hearing on S. 1739 and noted that "This approach fosters market determinations of royalty levels and distribution patterns." At a February 14, 1987, meeting of the National Association of Recording Merchandisers (NARM), Elliot Goldman, the President of RCA/Ariola Records, urged that the dual-inventory approach offered a real-world solution that "accomplishes most of the main goals of all parties and, more importantly, achieves the main desires of the various governmental authorities, those, being copyright protection, technological advancement, and satisfying consumer expectation."[14] As Goldman correctly noted, his enthusiasm for the dual inventory approach is not shared by manufacturers or the merchandising community. In fact at the August, 1986, hearing on S. 1739 one retailer said that forcing the retailer to carry a dual inventory would be crippling and would ultimately force the small retailer out of business. At that hearing Stanley Gortikov, then President of the RIAA, suggested that some recording companies will encode and some might not. He did not discuss a dual-inventory approach.

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[14] Lichtman, "Goldman: Consumer Choice on DAT; Keynoter Unveils Dual-Stock Proposal." *Billboard* 3, 76 (February 28, 1987.)

IV. EFFECTS ON INTERNATIONAL STANDARD

The pending bills would have no direct effect on DAT practices in Japan. The unmodified recorders have already been introduced there, where American recordings enjoy considerable popularity. However, the Japanese authors' rights society (JASRAC, the equivalent of United States performing right societies) and the Japanese Music Publishers Association launched a major protest this February against the unencrypted DAT technology. They urge the Japanese government to legislate copyright compensation by levies on audio and video hardware and copying media. Arguing that the DAT technology will inevitably lead to more unauthorized copying, they say they can never accept a situation where the public is encouraged to pay for the machinery, but not the music.15/

Legislation in the United States may indirectly affect DAT practices in Western Europe. Copy-code requirements here will at least give added impetus to EEC considerations to pass similar requirements. If they do, the combined mandatory requirements for inclusion of scanners in the United States and in Common Market countries would set the stage for the establishment of an international standard for DAT hardware.

The pending bills are consistent with existing international copyright conventions, both the Universal Copyright Convention and the Berne Convention. As an alternative solution to protect copyright owners against unauthorized copying, no convention requirements are violated. Although I am no trade expert, I venture that the requirements of the General Agreement on Tariffs and Trade are also not violated by the pending DAT bills. None imposes a duty.

V. THE VIEWS OF THE COPYRIGHT OFFICE

The Copyright Office has been involved in or witness to nearly every aspect of the so-called "home copying" issue since the process of revising our copyright laws began in the late 1950's and early 1960's. We've seen, too, how this is part of the larger issue of "personal copying"

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15. "Japanese Groups Charge Copyright Infringement; Authors' Rights Societies Protest DAT," Billboard 64, March 14, 1987.

which can involve educational uses, library-based activities and a greater variety of works than sound recordings. No issue has evoked a more polarized public debate than private copying; no issue has more successfully evaded rational solution; and, no issue seems to involve so thoroughly the future shape of the American copyright marketplace, in which consumers will have the means to reproduce, alter and use copies of works and performances of works.

The current proposals to protect the rights of copyright holders in audio recordings by legislating mandatory technologic controls on the most advanced copying hardware can be viewed as a very narrow issue, or the tip of an iceberg. Narrowly, we are talking about protecting new compact disc audio formats from potentially unfair competition from the still emerging DAT system. The tip of the iceberg may be that we will take the unprecedented step of encouraging a technologic inhibition of consumer behavior in one area and the equities in other consumer-copying situations are equally compelling.

The emergence of DAT has cast into a sharper light, what is at issue in the larger private copying controversy. It has been clear for some time that technology is taking us farther away from the traditional controls of the copyright marketplace toward a future in which rights may need redefinition and the means of their exercise and enforcement substantially modified. DAT erases the last distinctions between the professional manufacturer of copies of works and the ultimate consumer's copying.

The bills on the table today address these larger problems, but they all have the look of a quick fix rather than a long-range solution. Over the years, the Copyright Office has supported a royalty solution whenever it has been shown that a significant use of a protected work is being made with significant commercial impact. Private copying can be, and in many cases is, such a significant use with significant impact. The impossibility of direct title-by-title licensing of individual users has made the tape/hardware levy the only workable long term solution to the compensation problem.

Our reluctance to embrace these proposals wholeheartedly stems from more than a functional preference for licensing solutions. It also rests on our uncertainty over where this initiative could lead, and whether we have considered the impact of these sorts of changes on the overall structure of the 1976 Copyright Act.

First, exclusive rights under copyright -- particularly the reproduction right -- have never been absolute. Such rights would have been impossible to enforce and would be clearly undesirable. The right of the people to make reasonable uses of protected material, including reproduction, is to us as firmly a part of the copyright system as is the authors' right to control the great bulk of commercially significant reproduction of works. While these bills are directed at clearly unreasonable reproductions, that clearly go beyond the scope of fair use, the means to achieve the objective creates a de facto absolute reproduction right for this class of works.

The copy-code scanner does not understand "fair use"; it does not comprehend limited educational or library-based copying which we might all agree was otherwise acceptable. And, as a precedent, we doubt whether such an all-or-nothing approach to the right of the public to reproduce reasonable portions of works should be encouraged.

Second, although some of the bills limit the right to copy-encode recordings to those embodying protected materials, we are troubled still by the fact that the work can fall into the public domain and the copying restraint will obviously live on and on. Practically, though probably not legally, this sort of approach may be at variance with the spirit of the "Limited Times" provision of the Constitution.

Third, we believe that the balance of rights and exceptions in Title 17 is an interwoven set of compromises. Copyright must last for a long time because the rights of exploitation are qualified by exceptions, and the commercial lifespan of an author's work has grown longer and longer. So I ask if Congress wants to give copyright owners far greater effective control over their works than anticipated by the drafters of the 1976 Act, where a very careful balance between the right to exclude and the right to access was sought.

The Copyright Office hopes, therefore, that consideration may yet be given to alternatives to these proposals, particularly those that can lead to a long term solution more in keeping with the overall approach our copyright laws have long had: keep the technology free to grow and contribute to the well-being, enlightenment and entertainment of the people; but, make it subject to the legitimate interests of the laboring author and the risk-taking entrepreneur.

There may be such options. While the so-called "dual-inventory" solution noted earlier has encountered resistance as a matter of trade practice, it might be possible to consider requiring copy-code scanners in hardware, while authorizing the "notching" of phonorecords only when copyable phonorecords have been distributed at a fair price.

More to the point, would it not be possible to devise a royalty-based solution to the immediate problem at hand: specifically protecting the CD market from erosion by DAT? Would a long term copyright solution be easier to find, if it is desired, by imposing, now, upon digital audio tape, a royalty from which rightsholders might be compensated?

The concerns I've raised are not intended to be a "parade of horrors." They are, questions that you will look at as your consider this legislation. We are prepared, of course, to work closely with the Congress to explore these issues and to assist in the perfection of the legislation before you.

I will be pleased to answer any questions.

RESPONSES OF THE COPYRIGHT OFFICE TO ADDITIONAL QUESTIONS

Senator DeConcini's Questions

1. Mr. Oman, in your statement you say that DAT is capable of making perfect copies of compact discs and other phonorecords. Would you please comment on the testimony we have heard today that DAT is merely a better tape recorder and that it will be capable only of making better analog recordings of digital recordings?

The DAT recorder can make perfect copies, but Japanese manufacturers have agreed to alter the original prototype version to prevent direct digital-to-digital recordings. Instead, a compact disc could be indirectly copied by a simple process which converts the digital signal to an analog signal and back to digital again. The resulting loss in sound quality is barely perceptible to the human ear. As imported then, the DAT will make near-perfect copies.

2. Mr. Oman, you have testified before this subcommittee in the past in support of the royalty solution to the home audio taping problem. Is the proposal forwarded by the recording industry really anything but the royalty solution without the distribution safeguards that were included last year? If the record industry were to market copyable and non-copyable software at different prices, wouldn't the effect be that of a royalty going straight to the record companies?

The proposed legislation might be seen as a kind of royalty, if indeed a dual-inventory were required; it is not. If record producers are required to provide a copyable recording at a higher price, some of this money should go to the same people who benefit under a royalty scheme. Studio musicians are paid at a flat rate; other performers receive a percentage of the sale price. As you correctly observe, this legislation contains no distribution guarantees. So in effect it could mean most of the money would go to the record company.

4. Mr. Oman, you suggest that you reluctantly support the technological solution to the home taping problem with a sunset. Is your support based on a conclusion that once DAT is available to the consumer that it will never be possible to impose the so-called royalty that you would prefer?

My support is based on the conclusion that unrestrained, uncompensated private copying of complete copyrighted works is not fair copyright policy. I have indicated my preference for a royalty solution. Pending the emergence of congressional support for a royalty solution, I reluctantly conclude that a temporary technological solution is better than doing nothing to protect copyright owners.

5. From a copyright standpoint, would it make any sense to treat DAT differently than other tape recorders?

The DAT proposal is an unusual but not a unique concept in the context of copyright. The basic difference between the DAT recorder and other recorders is of course the master quality recording that the DAT can produce. A basic aim of copyright is served when copyright owners receive compensation for commercially significant use of their works. It seems certain that DAT's will be used primarily to tape copyrighted works.

Senator Hatch's Questions

1. **Mr. Oman, in particular, I would address this question to you. As I have noted earlier, the copyright law does not grant an overgeneralized monopoly to the copyright holder. It does allow portions of copyrighted material to be copied for reasonable and scholarly purposes. This is the fair use doctrine. I also want to clarify that this is one reason the *Betamax* case disturbs me. It applied the fair use doctrine to copying of an entire work for any purpose. The fair use doctrine was drafted in order to strike a proper balance between limited copying for reasonable purposes and unlimited copying for any purpose. How will a technological approach to this DAT problem preserve that balance?**

An unwarranted extension of the *Betamax* ruling could have disturbing implications for fair use. As Justice Blackman correctly noted in the *Betamax* dissent, the fair use exemption was designed to permit the kind of research or comment that works for the public good. Moreover, the majority in that case limited their discussion of fair use to time shifting for later viewing by the individual in the home. Consequently, the *Betamax* case should not be read to permit private copying for any purpose. As I noted in my statement, however, a permanent technological solution will be too all-embracing; it will not permit appropriate fair use considerations.

2. **Can you recommend any approach to the DAT taping problem that would preserve the current balance of copyright laws?**

The most balanced solution to the DAT threat is to impose a royalty on all types of phonorecords embodying copyrighted music and sound recordings -- CD's, DAT cassettes and conventional records and tapes -- without regard to configuration. This would allow for compensation only when the work is subject to copyright protection, in contrast to the permanent encoding of a phonorecord, which inhibits copying even after the recorded work enters the public domain. While a number of foreign countries have adopted the royalty solution, the ban on hardware is essentially a new approach to the private copying problem.

Senator DECONCINI. Thank you very much, Mr. Oman.

Mr. Weingarten, please proceed, if you can summarize your statement. I understand Mr. Garcia, your colleague, is with you.

STATEMENT OF FRED W. WEINGARTEN, OFFICE OF TECHNOLOGY ASSESSMENT, ACCOMPANIED BY LINDA GARCIA

Mr. WEINGARTEN. Yes, Mr. Chairman.

It's always a pleasure to appear before these committees and try to help them wrestle with these very difficult issues. I would like to summarize orally some of the points of the testimony in the interest of time.

I'm intrigued that, coming from the Office of Technology Assessment, we don't have any array of technology to present. On the other hand, I think I bring something much better. Miss Linda Garcia, who is accompanying me, was project director of a report that was delivered in April 1986 to the two committees, titled "Intellectual Property in an Age of Electronics and Information." Our testimony today will be based on that.

As usual, OTA does not recommend for or against specific legislation or take positions on bills, but tries to offer some analytical help to the Congress in understanding the issues that are at hand.

I should also say that we haven't studied any of the specific legislation in detail, nor have we have had access to or looked at the particular control mechanisms. Nevertheless, our study did raise a number of points that we think this particular issue illustrates and that perhaps will help Congress address the dilemma it is facing.

We make four points in our testimony, and I would like to develop the first point a little bit, just underline the other three, and then be open for questions.

Our first point is that the state of the law regarding private copying is, in our terms, ambiguous. A personal comment on that is that, as a nonlawyer, I'm often intrigued at our workshops. I see lawyers take stands that are 180 degrees opposite one another, yet each one argues that the law clearly supports his or her position. Even when one brings up a Supreme Court decision, the other lawyer will say, "Well, the Court didn't understand the law." So, we understand that there are experts who argue that the law is clear. Nevertheless, it's OTA's position that the law regarding private copying is unambiguous.

We think that's particularly important for two reasons. First, as the earlier discussion today illustrated, the subtleties and complexities between the extreme positions for and against home taping are such that the average citizen who purchases this technology is at sea. Understanding that the law is often a complex area in which to deal, still, most of us don't go through life with a general counsel at our right arm telling us what we can and cannot do with technologies in our own homes.

The dilemma is that the technology industry is bringing on the market give us more and more power to do things, that other people, outside the home, care about and feel threatened by.

The ambiguity is also particularly important to consider in terms of any legislation that would prevent certain activities. It is analogous to requiring a governor on an automobile without having a legal speed limit that such a governor is intended to enforce. A technological fix that is intended to limit behavior that is not, in itself, clearly illegal under the current state of the law and seems to be an unusual approach.

Our other points are as follows: first, technological fixes, by and large, have not been used to enforce copyright law and raise a number of questions. Some of the debate we've heard today includes questions of liability, the effect on the quality of the audio sound, the cost, and, finally, the bypassability or the ability of people to disable the technology. Bypassing is a particularly difficult issue to analyze, because one is trying to predict the creativity of some very bright and highly motivated technical experts.

This morning I was handed an article describing a recent action by the Federal law enforcement authorities against people who have found a way to modify the chips and bypass the radio controls in cellular telephones. These chips are intended to identify the initiator of cellular calls. I don't think the industry anticipated that people would so quickly find ways to bypass the controls built into that technology. So, it is always hard to anticipate whether or not a technological control will be easily bypassed or disabled.

That brings us to our third point, which is about enforcement as a role of the Federal Government. Devising new ways to protect or extend the protections of intellectual property law will inevitably change the role of the Federal Government in enforcement. OTA thinks that the Congress should consider carefully the institutional implications of moving away from a self-enforcing mechanism that has been traditionally used toward more active roles of mandating technological controls and enforcing a law against modifying them.

Finally, very briefly, there are significant international implications in using what may seem to be trade restrictions or legislation regarding trade to achieve intellectual property goals in the absence of modifying intellectual property law itself.

One of the implications in many of the studies conducted by my office is that, in the information age in which we live, laws regarding information coming from different legal regimes interact with one another in unexpected and unanticipated—sometimes unpleasant—ways.

Thank you again for the opportunity to testify. We're certainly willing to answer questions.

[The joint statement of Mr. Weingarten and Ms. Garcia follows:]

TESTIMONY OF FRED W. WEINGARTEN AND LINDA GARCIA
OFFICE OF TECHNOLOGY ASSESSMENT
U. S. CONGRESS
BEFORE A JOINT HEARING OF THE
SENATE SUBCOMMITTEE ON PATENTS, COPYRIGHTS AND TRADEMARKS
AND
HOUSE SUBCOMMITTEE ON COURTS, CIVIL LIBERTIES, AND ADMINISTRATION OF JUSTICE
HOUSE AND SENATE COMMITTEES ON THE JUDICIARY

COPYRIGHT ISSUES PRESENTED BY DIGITAL AUDIO TAPE

APRIL 2, 1987

Thank you, Mr. Chairman. It is a privilege to be asked to appear before these two subcommittees to discuss OTA's work on intellectual property as it relates to digital audio taping. Accompanying me today is Ms. Linda Garcia.

My comments today will be based on our report, Intellectual Property in an Age of Electronics and Information, released in April, 1986. Ms. Garcia was project director of that study, which was requested by the House Committee on the Judiciary, the House Subcommittee on Courts, Civil Liberties, and the Administration of Justice, and the Senate Subcommittee on Patents, Copyright, and Trademarks.

Findings from the OTA Study

I should caution that we have not done a detailed legislative analysis of any bill regarding digital audio taping, nor have we analyzed the specific technologies for protecting against copying that are specified in various bills. Nevertheless, four of our study's findings seem to bear directly on the considerations of Congress. These findings are:

- current law is ambiguous about whether private copying is covered, or was ever intended to be covered, by copyright law;

- technological approaches to preventing copying vary in their effectiveness and are generally defeatable over the long run;

- nontraditional mechanisms for providing intellectual property rights often require a greater role for government in implementing and enforcing such rights;

- the global nature of intellectual property problems increasingly requires that they be resolved on an international basis and that they take other international policies into account.

Based on these findings, I would like to suggest a number of questions that the Committees might ask and a number of factors that they might consider when evaluating legislation of this kind.

Questions and Factors For Consideration

1. In considering any bill that would create a right to revenues from private copying -- whether through a technological protection scheme or a tax on blank media such as audio or video tape -- the first question to ask is whether Congress wants to explicitly make unauthorized home copying an illegal act. To date, the status of home taping under copyright law is unclear. As a policy matter, Congress has yet to explicitly decide whether copyright is the right to control commercial use -- the use of a work for commercial profit in the marketplace, or whether it is the right to control private use -- the use of a copy after its ultimate sale. As a legal matter, there have been no court decisions that hold private use to be illegal. In Sony v. Universal Studios, the court held private use for "time shifting" a legal, fair use, but left open the question of whether private use for any other purpose is illegal. Further, the legislative history of a 1971 amendment to the Copyright Act, which first extended copyright protection to sound recordings, indicates that Congress did not intend the right to reproduce a copyrighted work to preclude private use, particularly "home taping." A House Report accompanying the amendment says:

> Specifically, it is not the intention of the Committee to restrain the home recording, from broadcasts or from tapes or records, of recorded performances, where the home recording is for private use and with no purpose of reproducing or otherwise capitalizing on it. H.R. Rep. No. 92-487, 92nd Cong., 1st sess. 2 (1971).

Although this language affirms the legality of private use, some contend that the law remains ambiguous, because the Copyright Act of 1976 does not reiterate this 1971 qualification.

2. Assuming for the moment the illegality of private copying, the Congress, in considering legislation that relies on technological solutions to prevent copying, will need to ascertain how effective a particular preventative device might be. Some systems are relatively easy to defeat; others are more difficult. In any case, this approach is often unworkable over time, because the technology changes rapidly.

Although OTA did not examine any particular devices in great detail, it did come to some general conclusions about technological solutions. OTA found that every technological approach to protection requires a trade off between the security of the property and its accessibility, marketability, cost, and quality. Furthermore, while any technological barrier may work in some cases by acting as a "stop sign," warning against unauthorized use, no form of technological protection is 100 percent effective against determined opponents. Over the long run, new technologies will reduce the effectiveness of these devices. Moreover, the higher the level of society's computing skills, the more difficult the job of technological protection becomes.

3. Because technological devices are a non-traditional approach to enforcing copyrights, the Congress might also want to look at the extent to which, and how, the Federal Government might need to be involved in order to make a technological solution stick. Insofar as these technologies are susceptible to bypass or deactivation, the Government would, first of all, have to make such activities illegal. Then, in order to detect and enforce this prohibition, either the government or private parties would have to conduct some form of search, inspection, or surveillance. In addition, if such laws entail the control of imports into the United States, the additional burden of enforcement must also be taken into account. Courts would also experience a greater workload to the extent that deactivating or bypassing technological devices entail civil lawsuits. Notwithstanding increased government involvement, however, such laws may be very hard to enforce since they attempt to govern how people use their personal property in the privacy of their homes.

4. Congress will also want to consider the international implications of using trade restrictions as a way of dealing with intellectual property problems. As the OTA report points out, attempts to resolve international intellectual property problems are likely to be more effective when they are undertaken as part of a multilateral effort. The unilateral imposition of trade restrictions might lead to retaliatory restraints on trade and to deteriorating international relationships. And, if the United States is the only country to impose such restrictions, then such a policy could only have a limited impact on the amount of copying worldwide. There is a danger, moreover, that if intellectual property policy is established in the context of trade issues, it may be skewed away from its original social policy goals.

Conclusion

Finally, I would like to develop a point about the broader and longer term context of this and similar legislation. A basic theme in much of OTA's work on information policy is that new information technology has sharpened the dilemma that Congress and the Courts face in trying to balance the need to encourage the dissemination of information against the need to restrict its use, for economic, national security, or other reasons. The remarkable advances in microelectronics have greatly empowered the individual to influence the way information is created, disseminated, and used in our society. Attempts to control information flows too tightly may either fail or be so draconian as to be legally and socially unacceptable, as well as economically costly. Yet, as in the case of intellectual property, it is often in our vital interest to provide such control or other incentives for the development of new information products and to protect those products from misappropriation. There is no doubt that information is becoming increasingly valuable to our society, both as a marketable commodity in its own right and as a basic factor of economic and social activity.

Because of the difficulties in enforcing laws that regulate private activity, OTA found that it is more important than ever before to design a law that can gain broad public acceptance. This should be possible, given OTA's finding that the public "draws the line at behaviors that infringe on intellectual property rights when they involve the obvious or active circumvention of payment, when they are done for sale or profit, or on behalf of business or in a corporate setting." While providing protection, such a law would need to take into account the desire by individuals to share in the benefits that the new information and communications technologies afford.

Although we have not examined any bill in any detail, our study suggests how such an analysis might proceed. Figure One, for example, suggests six criteria that might be used to evaluate any proposed legislation. These criteria are: effectiveness in meeting overall system goals, efficiency in achieving goals, enforceability, durability, precision as a policy tool, and congruence with international and other national systems. Corresponding to these criteria are a number of research questions that might be asked to determine how well the criteria can be met and a number of indicators that serve to answer these questions. The broad scope of the table illustrates the magnitude and complexity of intellectual property issues and suggests that decisions made about them be considered in a broad policy context.

Mr. Chairman, I hope these comments have been useful to the committee, and Ms. Garcia and I will be pleased to try to answer any questions you might have.

FIGURE 1

Evaluative criteria	Questions for research	Indicators/types of information that might be collected
1. Effectiveness in meeting overall systems goals		
A. Creation and dissemination of creative, informational, and scientific works	Degree of creativity	• Evaluations of creators, critics, users • Output of works • Number of prizes offered in these fields • Number of people engaged in these fields • Interactions of members of the creative environment
	Availability	• Number and variety of informational resources • Evaluations of creators, publishers, producers, users • Diversity of works • Price of works • Opportunities for access
	Congruence of incentives	• Evaluations of creators, publishers, and producers • Level of output
B. Enhancement of the learning environment	Degree of scientific and technological development	• Emergence of new fields • Number of scientists/technologists • Number and quality of scientific publications • Interactions between members of the scientific/technical community • Patents issued • Awards granted • Evaluations by members of the scientific/technical community
	State of the arts and entertainment	• Emergence of new fields • Number of creators • Condition of production/distribution industries • Availability of resources for creation/production/distribution • Awards granted • Market for creative works
	Overall condition of education	• Evaluations by national educators/businessmen/parents/National Science Foundation/etc. • Literacy rates • Test scores • Availability and qualifications of faculty/teachers • Quantity and quality of educational materials/information-based resources • Interactions among members of the educational community
C. Economic growth and development	Growth of information-based industries	• Development of new industries and profit-making opportunities • Percentage of employment • Number of firms • Contribution to gross national product • Use of information-based products and services in non-information industries
	International competitiveness	• Balance of trade
2. Efficiency in achieving goals	Costs and benefits of granting rights	• Institutional costs • Transactional costs • Social costs in terms of achieving systems goals • Benefits measured in terms of achieving system goals • Estimates of harm due to infringement/lack of intellectual property protection • Profit margins • Industry competition • Estimates of economic value of intellectual property rights to proprietors

Evaluative criteria	Questions for research	Indicators/types of information that might be collected
	Costs and benefits of alternative measures for achieving system goals	• Institutional costs • Transactional costs • Social/economic costs/benefit in terms of achieving system goals
3. Enforceability	Extent of infringement	• Public/institutional behaviors • Technological capabilities to access/reproduce/reformat information-based products and services • Privacy of use and decentralized access to reproductive/access/and communication technologies • Technological capabilities to preclude authorized access/use
	Ease of detection	• Transaction costs • Technological capabilities to monitor access/use
	Legitimacy of the system	• Public attitudes/support for the system
4. System durability	Flexibility in the face of change	• Frequency of legislative revision/amendment • Resort to alternative forms of protection • Consensus in cases of first impression • Consistent/coherent application of law
	Legitimacy of the system	• Public attitudes/support for the system • Extent of infringement
	Ability to resolve conflicts/harmonize interests	• Acceptance of decisions by parties in dispute—i.e., number of appeals
	Reliability/predictability as a guide to action	• Extent of unresolved issues—i.e., fair use, copyrightability of computer software
	Robustness of principles	• Internal coherence/consistency of law • Resort to other forms of protection • Overlap with other law
5. Precision as policy tool	Predictability of outcome	• Quality, quantity, independence of available information
	Independence/compatibility with respect to other policy areas	• Number of agencies involved • Cross-cutting issues • Interested congressional committees • Convergence of stakeholder interests • Intensification of issues
	Sensitivity to differences among different kinds of information-based products and services	• Roles of different kinds of information-based products and services • Economics of different kinds of information markets • Public attitudes toward different types of information-based products and services • Technological characteristics of different information-based products and services
6. Congruence with international and other national systems	Ability to resolve conflicts	• Enforcement mechanisms • Level of infringement • International court cases • Resort to other policies mechanisms to deter infringement—i.e., trade sanctions
	Harmony with other intellectual property systems	• Level and participation in international regimes • Scope of international treaties • Incompatibilities with international law—i.e., informalities
	Compatibility with other international regimes—i.e., GATT, UNESCO	• Policy conflicts and inconsistencies

SOURCE: OTA Report, "Intellectual Property Rights in an Age of Electronics and Information"

Senator DECONCINI. Thank you, Mr. Weingarten.

I do have some questions, as does Senator Hatch. I'm going to submit them for the record due to time and yield to my cochairman, Representative Kastenmeier.

Mr. KASTENMEIER. Thank you, Mr. Chairman.

I will be brief. I think the subject is intriguing and it would take us a very long time to discuss the questions and answers.

I take it, Mr. Oman, that it's clear that you differ with the preceding witness, Mr. Berman, insofar as you very definitely do not support a technological approach to the problem. You do support, as he now apparently does not, a royalty approach to the problem. You do this, I gather, in part because of international considerations; is that correct—to be somewhat more compatible with the rest of the world in terms of treatment of this question?

Mr. OMAN. That's certainly one aspect of it, Mr. Chairman. There are several countries that have gone toward the royalties solution to the problem, and none yet have attempted the technological solution. As was mentioned, the EEC is currently studying that possible avenue.

That's one of several reasons for preferring the royalty system in the Copyright Office. We think that it's a better system, one that does not stand in the way of the full exploitation of the new technology, and that has always been a preference of the Copyright Office.

Mr. KASTENMEIER. In this case you mentioned, too, technology and limitations on technology cannot make distinctions in terms of what is fair use. Indeed, we have a copy of new compact disk which is in the public domain, but it is presumably going to be placed under limitation. It is a Beethoven symphony recorded in 1952 in Carnegie Hall. This device will be—this disk will be limited in terms of the reproductive ability or quality, notwithstanding that it is entirely, both from a recording and from a composer's standpoint, in the public domain. That also poses a problem, does it not?

Mr. OMAN. That does pose a problem, and it raises some tangential constitutional problems under the Constitution, that is, whether or not you would indirectly be extending the limited time for the duration of copyright. If, just prior to the expiration of the copyright in the sound recording or the underlying musical work, a new recording were issued with the copy-code scanner intact, it would in fact prevent copying of that work not just for the 3 years remaining on the copyright, but forever.

Mr. KASTENMEIER. What are the implications if Congress were to pursue this 1-year limitation on the importation of digital audio taping equipment for all other forms of copying, the highly perfected home office reproduction equipment, for software generally, for the video—for the movie industry, and for really all forms of expression in which new technology plays an important part?

Mr. OMAN. Some of the bills do address that problem by authorizing the Secretary of Commerce to grant exceptions to the requirement. The standards that the Secretary of Commerce would apply in determining what was a legitimate or bona fide business purpose in granting an exemption aren't clear, but I think there is at least an acknowledgment that that problem exists and that there is an effort to meet it.

Mr. KASTENMEIER. I have one question for Mr. Weingarten, and that is: as you study this from a technical standpoint, the motion picture industry in many of its video tapes that it puts out does, as I understand it, currently has a limitation in those tapes in terms of reproduction. Is that equivalent to the so-called flag code in the audio equipment as opposed to the new copy-code format, or can you advise us on that?

Mr. WEINGARTEN. We have not studied either of those in detail. I would suspect that since one is an analog recording and the other is a digital technique, that there is some difference. The intention is similar.

Mr. KASTENMEIER. I guess my last question, Mr. Oman, is: can you personally rationalize a provision, the underlying purpose of which is copyright protection, which selects out one part of the technology, in this case digital audio taping, but not another, that is, analog audio taping, and that suggests that there is a copyright, a theoretical copyright basis for the distinction?

Mr. OMAN. I think that Congress back in 1985, when it repealed the first-sale doctrine as regards the audio market, was recognizing the direct threat posed by the compact disk. So that changed the equation and made Congress, I think, more sympathetic to the concerns about a rental operation that was a subterfuge for a home taping operation. That was what prompted you to move in terms of repeal of the first-sale doctrine.

If the technology were allowed to go to its full limits, the compact disk/digital audio tape combination would pose a very major and different threat to the recording industry than would mere analog copying on a conventional machine. I really do think, as a former home taper myself, that I would always have the desire to buy the perfect copy (for my own personal use) if I liked a piece of music.

I never have the satisfaction for those recordings I made off the air, those few remaining copies in my collection, that I was getting something of very high quality. It was a curiosity. It was nice to have, but it never displaced the sale in my own mind. But if I were really seriously interested in a piece of music, I would buy the original.

I think in the case of the digital audio tape combined with the compact disk, the copy I got, if I were a home taper, would be every bit as good as the copy I could buy.

Mr. KASTENMEIER. We did not premise the rental bill exclusively on compact disks; it does apply to analog recordings as well; does it not?

Mr. OMAN. It does, but I think it was put in critical context of the threat that was down the road hiding in the bushes. The new compact disk technology was I think what prompted at least the members of the Senate to move forward and enact legislation or to support legislation along that line.

Mr. KASTENMEIER. Thank you, Mr. Chairman.

Senator DECONCINI. Thank you, Chairman Kastenmeier.

I see that the ranking member of the committee, Mr. Moorhead, has joined us. Mr. Moorhead, do you have any opening statement or questions?

Mr. MOORHEAD. I already have——

Senator **DeConcini**. It was delivered with great eloquence, by the way. [Laughter.]

Mr. **Moorhead**. I did have a couple of questions.

Senator **DeConcini**. Please proceed.

Mr. **Moorhead**. You know, I think we take for granted that any kind of copying of a copyrighted material without permission is a violation of the copyright law, but at the same time Americans pretty well take it for granted that they have the right to copy anything in their own home. So we're faced with a dilemma, and that's why we have this legislation. Thus far, we've refused to adopt any kind of a compensation system for the copyright owner such as we have in many other areas—voluntary music licensing provisions that are in effect for much of the industry, compulsory license for cable, and other things.

This is kind of a stopgap measure, is it not, so we can reach some kind of an agreement that will permit the copying in homes and at the same time pay the copyright owner something for his work? Is that correct?

Mr. **Oman**. Well, I think it's proposed as a stopgap measure, but I think the effect would be that, once the technology starts entering the market and people accommodate the new technology, it will become very difficult to change that down the road. Yet, people start relying on it and its status quo in terms of what their buying habits are concerning the sale of the compact disk machines. Either they will come in with copy guards installed and people will buy records and rely on those records or the compact disks to build a tape library that accommodates the new technology or the DAT machines won't come in and people will postpone a buying decision, and we will have postponed the decision one way or another.

In terms of its being a stopgap measure, it is going to be difficult to do in the marketplace in a meaningful sense. We're hoping that you can, in fact, have it serve as a stopgap and allow an experimental use of the technology, so we can then 3 years from now examine the impact on home taping, examine the impact on record sales, examine the impact on the whole compact disk technology. But it's going to be harder to do than we think it is at the outset, I think.

Mr. **Moorhead**. It would seem to me you're going to have more and more pressure to use these new devices in any way that people could possibly use them. If we don't have some kind of a stopgap measure such as this in effect that prohibits the use of the devices for copying American records, pending some kind of a financial measure, there may be so much pressure that it's impossible to bring a solution; is that not correct?

Mr. **Oman**. I think that is the case. Certainly the argument to act now is very persuasive, only because there are no machines in the country. If we try to act 3 years from now and adopt a copy-code scanner, I think you will have a political impossibility. So if you want to go the copy-code scanner route, you should do it now and not wait until 3 years from now.

Mr. **Moorhead**. If we do believe that copyrighted material should be protected in some way and that there is some validity to copyright, it's well to have some kind of pressure on the people that might want to use these devices to get some kind of a royalty proposal, so that they would have something to gain. They've already been doing the copying and have been able to do it freely with no kind of limitation. They're going to fight awfully hard against any kind of a royalty.

Mr. OMAN. Yes, sir, that has been the continuing political problem. But I think that the consumers could be educated on that point and could see how it would be in their long-term interest as potential home tapers, as music lovers, as record buyers, as compact disk buyers, to support some modest royalty system that would encourage the free flowering of all of this new technology.

Mr. MOORHEAD. Have you seen some kind of movement in this direction beyond myself and a few others that have sponsored that kind of legislation to see any real culmination of that?

Mr. OMAN. Well, we were all hoping this morning that the opponents of the pending bill would have offered as an alternative some modest royalty plan of their own, but we were disappointed. I suspect that if the pressures build and they see the copy-code scanner requirement moving as a possibility on the legislative horizon, they might, then, rethink their position and decide that a modest royalty would be in their own best interest.

Mr. MOORHEAD. Mr. Weingarten, do you have any comments on this?

Mr. WEINGARTEN. On the stopgap measure issue itself? No, sir. However, I would repeat our first point—that in the area of home taping, the law seems to us to be ambiguous enough that its clarification needs to accompany any attempt to make a technological fix.

I could make comment on the public acceptance. We did some polling as part of our study and found that the public seemed to understand fairly well the need of creators for compensation for their work and seemed to feel that it was unfair for commercial markets to be disrupted by piracy or other circumventions.

It was not clear to us that there would not be public support for a reasonably balanced approach for preserving their interest in using these new technologies for their own private purposes and in seeing that the music industry is compensated, because after all it produces what they like to buy.

Mr. MOORHEAD. Thank you both very much.

Senator DECONCINI. Thank you, Congressman Moorhead.

Congressman Morrison?

Mr. MORRISON. Thank you very much, Mr. Chairman.

Gentlemen, just to clarify something that you answered in response to Chairman Kastenmeier's question about the public domain recordings, that would depend on whether the public domain recordings were encoded or not to defeat the taping mechanisms; isn't that right? In other words, if they weren't encoded, then they could be recorded, they could be copied in the same way as they are today? Isn't that correct?

Mr. OMAN. That is the case.

Mr. MORRISON. In other words, it depends on what is done. It isn't a necessary conclusion that because copy-code technology is in the recording machine that public domain recordings will not be able to duplicated. That depends on whether they're permitted to be encoded or not?

Mr. **Oman**. I think the answer to the question probably would be what would happen in the real world. I don't think record companies would necessarily manufacture records that were in the public domain. They would have a copyright on the sound recording at least, if not on the underlying music, but the copy-code would be in place on the record or on the compact disk when the copyright on the sound recording or the music subsequently falls into the public domain.

The copy-code mechanism, the circuitry, doesn't self-destruct the moment the record goes into the public domain. It's there forever.

Mr. **Morrison**. The thrust of your testimony suggests that you think there is a problem here that ought to be addressed by some form of compensation for the owners of the copyrights on this work. Is that a fair statement?

Mr. **Oman**. Absolutely, Mr. Morrison. That really underlies our entire testimony. For 20 years the Copyright Office has recognized the problem with excessive home taping and trying to balance that home taping with fair compensation for the creator.

Mr. **Morrison**. I guess it also would be fair to say—that you believe that if one wanted to preserve the technological option, that we would have to act now; that if we wait very long and DAT becomes a major influx into our markets, that the ability to then decide a technological rather than a royalty solution would be very difficult? Is that a fair statement?

Mr. **Oman**. That is fair, and that's what I was attempting to get at in my long-winded answer to Mr. Moorhead's question—that we might lose our options if we wait, if we do want to have this technological option.

Mr. **Morrison**. I want to associate myself with the remarks of the gentleman from California about how lonely it was last year for those of us who thought that a royalty solution might be the answer. As a result, many of us now believe that perhaps using technology plus the marketplace to determine compensation is a better answer. It seems to me that folks had better 'fess up and support one approach or the other or declare that they support forever having people uncompensated, but that they can't sort of shift around among these options.

I would just point out that there are problems with royalties. Royalties all of a sudden come up as the answer. Royalties are also overbroad; that is, if royalties are on machines, people pay royalties who don't use them to duplicate. If we put royalties on blank tapes, you either charge people for using tapes for public domain copying and for other copying or you have to try to implement an extraordinarily complex system of exemptions which burdens the same people who are very concerned about the burden of dual inventory, which is one of the problems raised by the technological solutions.

I think it's important in the analysis of this, even though royalties have been our traditional approach, to not see royalties as the promised land. Leaving aside the political opposition from the industry, the political problems and the practical problems of royalties, there also are significant problems with respect to public acceptance because of the overbroad nature and the difficulty of administration a royalty system.

I would hope that the Copyright Office would take a close look at those problems as well in making the judgment between the traditional royalty approach and the technological approach, which is, I should emphasize, keyed toward compensation through a marketplace mechanism that would rely on higher priced copyable versions rather than uncopyable versions, which is a marketplace mechanism of compensating people rather than a regulatory and distribution mechanism, which has its benefits but also has its difficulties.

Mr. OMAN. The Copyright Office will study those relationships, as you suggest. One thing we did notice the absence of in the proposed legislation was some contingent arrangement whereby the copy-code scanning requirements would be made contingent on the record companies making available both an encoded and a non-encoded version at different prices. I didn't see any language that would suggest that that would be required, and whether or not they would produce a high-priced version that could be copied freely I think is at best speculative.

Mr. MORRISON. I think that is a very good point.

Thank you, Mr. Chairman.

Senator DECONCINI. Thank you, Representative Morrison.

Representative Lungren, do you have any questions?

Mr. LUNGREN. Well, I guess I have said—I think Mr. Oman said the case pretty strong, that the reason why there is a need for us to look at this seriously is that with the new quality of the devices you can actually, if you want to have for your own collection a very high quality recording; whereas, you suggested before that as a music admirer, if you were really interested now, you would go out and buy the original. I guess technology is pushing us to the position where you really do have to confront this more seriously than we have in the past.

I think initially I would look to the royalty method of compensation as the best answer, but Mr. Morrison pointed out the problems there.

I look at the bill as it is drafted and it does not make it illegal for someone to bring in one of these devices in the country. It makes it illegal for someone to sell it or use it for commercial purposes. I don't know if that was done to get away from the Ways and Means Committee or if it is going to be amended before it becomes law, but I suspect that, if it weren't amended and it became law, every GI overseas would bring one in for himself, his wife, and his family, and then what are you going to do—make it illegal to possess them?

Mr. OMAN. Excuse me. The administration bill I think would prohibit the importation of the machine.

Mr. LUNGREN. I believe the bill that is before the Congress does not make it illegal to do that.

Then I don't know what you do—then you make adapters illegal as well? We've done that with machine guns. I'm not sure we've done that with much else.

I just wonder if we're talking about getting into a situation where we get more and more intrusive and maybe, unless we make this a 1-year thing and we really act in a tribunal royalty setting, that we're kidding ourselves. I don't know. I'm just kind of thinking outloud, but I do think that your comments about the quality changes the nature of your purchase as a consumer is an important one to be kept in mind, because I do think it may very well affect the marketplace and cause much more trouble for copyright holders than what we have at present.

Thank you, Mr. Chairman.

Senator DECONCINI. Thank you.

Are there any other questions by any members?

Mr. KASTENMEIER. Mr. Oman, I'm a little bit uncertain as to your position on the proposition that there should be the Waxman-type bill as included in the trade bill in the House. Now, we have to make a decision on that within 30 days obviously.

Are you recommending that that provision be adopted or not be adopted, its having an underlying copyright purpose?

Mr. OMAN. Oh, the——

Mr. KASTENMEIER. The limitation on the DAT?

Mr. OMAN. The Copyright Office, if it were forced to decide, would reluctantly support the Waxman approach as a step in the right direction as long as it were clearly interim in nature, even though that would create other problems. It would in many ways keep the question open for 1 year or 3 years.

However, we think that the Congress under your leadership would effectively move in a purely copyright setting and enact a provision along the lines that I've suggested, with a surgically precise royalty on the DAT itself, and solve the problem and still maintain our options for the larger home taping issue.

Mr. KASTENMEIER. Well, of course, you've heard the position of the recording industry. It is not for the royalty approach at this point in time; it is for the DAT limitation approach, and I thought Mr. Berman was quite clear about that.

Thank you.

Senator DECONCINI. Chairman Kastenmeier, thank you very much.

Thank you, gentlemen. We appreciate the testimony. We do have some more questions I will submit due to time restraints here.

We will keep the record open for 2 weeks, if that is agreeable with Chairman Kastenmeier, for anybody who wants to supplement and add anything.

The committee will stand in recess subject to the call of the chairman.

[Whereupon, at 12:30 p.m, the subcommittees recessed to reconvene at the call of the Chair.]

APPENDIX

ADDITIONAL STATEMENTS

STATEMENT OF MARC FINER
PRESIDENT
COMMUNICATION RESEARCH, INC.

Before the
United States Senate
Committee on the Judiciary
Subcommittee on Patents, Copyrights and Trademarks

and the

United States House of Representatives
Committee on the Judiciary
Subcommittee on Courts, Civil Liberties and the
Administration of Justice

on Digital Audio Tape Recorders

April 2, 1987

Chairman DeConcini, Chairman Kastenmeier, and members of the Subcommittees, my name is Marc Finer. I am president of Communication Research, Inc. My company consults with the consumer electronics and home entertainment industries in the development and marketing of new, advanced technologies. I am writing to you today to urge opposition to any legislation, including that before these Subcommittees, that would hobble -- and would ultimately doom -- the newest technology on the horizon: the digital audio tape (DAT) recorder.

I have been involved in the consumer electronics/home entertainment industry for more than fifteen years, both in retail sales and, until recently, as Product Communication Manager for the Sony Consumer Audio Products Division. My areas of expertise include marketing and promotion in several diverse areas. I worked actively to introduce and implement the Compact Disc format, which industry experts call the most successful introduction of a new product in the consumer electronics industry in the past quarter of a century.

From my experience in launching new products such as the Compact Disc (CD), I have learned many lessons, lessons that I would like to share with you and with the Congress today. As you approach legislation on the new DAT format, it is critical that you understand the overriding importance of the relationship between hardware and entertainment software. This relationship, which must exist before any new home entertainment product can be successfully introduced, is necessary if the maximum benefits and enjoyment of the new product can be made available to the public.

Regarding the new DAT format, and after a thorough study of its marketing potential, I am absolutely convinced that DAT will both co-exist with other music media -- such as CD -- and will provide substantial additional benefits to the hardware and software industries alike. But, the home entertainment industries and the American public will only realize these benefits if you, the Members of Congress, reject legislation that would stifle the DAT.

THE IMPLICATIONS OF A NEW FORMAT

The DAT format is the natural evolution of a long line of consumer electronic products. At each stage in this evolutionary process, there have been those who have feared a new format, who have urged interventionism or protectionism. Their natural instinct has been to take all steps to safeguard their investments in existing technology. History shows, however, that when the marketplace -- consumer preferences -- is permitted to judge a new format, the industry achieves its greatest successes. In fact, most new formats have been embraced by the public, resulting in very substantial opportunities and enormous benefits for the entire industry. Some, of course, have been less successful. The key, Chairmen and Members of the Subcommittee, is to let this process take its course and to resist the temptation to skew consumer choice.

Why have some segments of our industry been so resistant to technological chance, to new formats? Based on my experience, some manufacturers, of both hardware and software, prematurely evaluate the market potential of a new product based on its functions -- on its inherent capabilities. They fail to assess adequately or to comprehend at the very outset where that product fits into the existing and future marketplace.

Those who take such a narrow view -- including the sectors that are now fighting the DAT format -- wait in fear as to the impact of a new technology on the status quo. Such fear, which, in the case of DAT, seems to be based on the technological capabilities of the format, or on some sense that DAT will interfere with the explosive success of the CD, is completely unfounded. In fact, in looking at the introduction of new products in the entertainment marketplace over the past ten years, it is clear that it is not the "technology," standing in isolation, that governs whether the product will succeed or fail. Rather, it is the evolutionary nature of the relationship between each new product and each consumer that decides whether a new product will be accepted and whether it will complement, or substitute for, existing products.

This general principle -- that the interactive relationship between a product and a consumer governs successor failure -- applies, of course, to the DAT format. Below, I will explain why the DAT will be a successful format and how it will bring additional benefits to the hardware and recording industries -- benefits beyond those that they now enjoy from conventional audio cassettes and from the CD. Before doing so, however, it might be useful, by way of example and to demonstrate my point, to examine briefly the histories of the conventional audio cassette and of the CD.

THE AUDIO CASSETTE:
AN EXAMPLE OF RESISTANCE TO CHANGE

The compact audio cassette was originally developed by N.V. Philips in 1964 as a monophonic voice dictation system. At that time, both Philips and most industry experts saw little potential for the cassette beyond this particular, fairly limited, essentially business application. How wrong they were!

By the early 1970s, we saw enormous advances in both the materials available for magnetic tapes and in noise reduction technology. These leaps forward, coupled with ingenious American and Japanese product engineering, launched a new direction for the audio cassette. These technological changes were matched by new marketing strategies that, cumulatively, culminated in 1979 with the introduction by Sony of the Walkman and with a market for car stereo that can only be described as "explosive." These developments, as you well know, brought about dramatic changes in consumer listening habits. The "good old days" of having to listen to music only at home were never to be the same.

In this much-abbreviated history of the audio cassette, the relevant lesson for our industry -- and for the Congress, too -- lies in the differing reactions to what was then a new format. On the one hand, the manufacturers of audio cassette recorders were prepared to support, in fact, even help to drive the demand for, the audio cassette. They worked hard to expand the cassette marketplace and the much broader marketplace for prerecorded music. On the other hand, however, the record companies fiercely, and for years, resisted the new audio cassette. In fact, the majority of the major music labels simply refrained from offering consumers high-quality prerecorded music for a substantial period of time. Perhaps, they hoped, if they did nothing (which is close to what many of them did) the momentum building behind the audio cassette would dissipate.

Despite the best, or worst, efforts of the recording industry, consumers began and continued to buy cassettes in record numbers. When they could not find high-quality prerecorded cassettes of their favorite artists, they turned to home taping, making cassette tapes of albums that they owned. By the end of 1986, U.S. consumers were purchasing 260 million blank cassettes for recording music for their personal use, to enjoy music in their cars and with portable audio equipment.[1] Most importantly, despite its late response to the demand for portability and for audio cassettes, last year the music industry was able to sell over 340 million prerecorded audio cassettes.[2] (As a point of reference, this number is almost three times the number of LPs and almost seven times the CDs sold in 1986!)

ANOTHER STAGE IN TECHNOLOGICAL EVOLUTION: THE SUCCESS OF THE COMPACT DISC

Obviously, the extraordinary revenues realized by the music industry from the audio cassette were hardly the end of the road for home entertainment. More was, and is, to come. The emergence of the cassette technology over the past twenty years has failed to satiate the consumer's appetite for more advanced music technology. Witness, then, the overwhelming success of the CD.

The CD was introduced in the United States in March 1983. In its first calendar year, a mere 35,000 players were sold. Today, only four short years later, CD is the biggest category in the home electronics industry, both in terms of high-fidelity units sold and in dollar sales.

The incredible growth on the hardware side of the CD market has been matched by the success enjoyed by the music industry itself. Despite a very slow initial response to capitalize software production, the record industry has seen the CD format skyrocket to approximately 25% of its total dollar sales by the end of

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[1] International Tape and Disc Association Seminar, March 19, 1987.

[2] Recording Industry Ass'n of America, 1986 Estimates.

1986.[3] This growth has come about even though the CD does not give consumers the luxury of a recording capability. Instead, its other sonic and operational benefits (digital sound quality, non-contact laser tracking, etc.) have proven to be more than enough to lure customers into retail stores in record numbers.

THE NEXT STEP:
DAT AND ITS PLACE IN THE MARKET

The audio cassette and the CD -- consumer demand for portability, convenience, and high-quality digital sound -- bring us squarely to where we are today: to the DAT. DAT combines the best digital sonic characteristics of a CD with the benefits of miniaturization and portability of the analog audio cassette. DAT, from the very beginning, was developed to make prerecorded music available on a cost-effective basis. For the recording industry itself, it is the natural evolution in the world of digital audio.

Thus, it is ironic, and a little sad, that certain segments of the music industry now argue that DAT is only a "predatory" product, and that it has no redeeming value as a medium for releasing prerecorded music. They disregard the probability that DAT, like the CD and the audio cassette before it, could once again have a tremendous and positive impact on music retailers and on consumers. Many of these industry representatives are the same as those who predict, wrongly, I believe, that the DAT would destroy the CD market.

In going back to the opening of my statement, to the lessons I've learned, it seems to me that these nay-sayers, these predictors of gloom and doom, ignore the classic relationship between a new product and the customer. Sales of CD software will continue to expand to an industry-projected 250 million units sold yearly in the United States by 1990. Furthermore, the growth of the CD format will be boosted by such new applications as CD-Video and CD-Interactive. In short, the overall CD market over the next few years will be ever-increasing in strength. Virtually nothing, I believe, can stop this trend.

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[3] Recording Industry Ass'n of America, 1986 Estimates.

Indeed, Jan Timmer, President of Polygram International, the world's largest manufacturer of CD software, has stated that DAT "won't hurt CD forecasts . . . . I believe we need a twin-carrier disc and tape structure . . . . We shouldn't be enemies of DAT, but we do need a sensible, well-timed way of introducing it."[4]

DAT: A SENSIBLE INTRODUCTION OF A NEW FORMAT

The benefits to be reaped from any new technology or new format must, of course, be weighed against the possible disadvantages that such technology might pose. That decision represents sound business practices, and nothing more. It is not, I believe, the appropriate province of Congress or of the federal government to weigh the relative merits of consumer electronics formats. That, however, is what you are being asked to do by those who would stop DAT.

Digital audio tape technology is no exception to the general rule that businesses should make sound decisions on when and how to introduce formats.

---

[4] J. Timmer, Address at the 1987 Convention of the National Association of Recording Merchandisers.

Regarding DAT, the advent of digital technology has brought incredible advances to the music-loving consumer that far outweigh any negatives. This has been true with the CD and I believe it will be proven true with the DAT.

Whether real or imagined, DAT is the logical next step of the audio cassette and CD formats in today's digital sound revolution. Together (and if can they do so without fear of persecution), the representatives of the hardware and software industries can develop meaningful and mutually beneficial ways to introduce the DAT to the American consumer.

I urge you to give the DAT a chance. By allowing the home entertainment industry -- equipment manufacturers and the record companies -- to introduce this exciting new format, you will benefit not just today's music lovers, but those of the future.

Thank you very much.

Statement of High Fidelity Magazine's Position on Proposed Legislation to Restrict Imports of Digital Audio Tape Recorders

Founded in 1951, *High Fidelity* is the second largest magazine in the world devoted to audio and recorded music. In addition, we publish the *Schwann Record & Tape Guide* (a complete catalog of available recordings and a primary reference for record stores and collectors), *Musical America* (a bimonthly magazine covering classical music and its performers since the turn of the century), and the *Musical America Directory* (literally the bible of the classical music industry, providing key information on virtually every performer in the field). Our interest in the proposed legislation to require inclusion of CBS's copy-guarding circuitry in digital audio tape recorders sold in this country is therefore very great.

We strongly oppose this legislation in its present form. The system proposed is unnecessary, contrary to the interests of consumers of recorded music, and potentially injurious to the record companies and the artists they represent. Although digital audio tape (DAT) machines will provide higher performance and greater convenience than current analog recorders, they are not fundamentally different in function, and we therefore expect that they will be used in much the same way as ordinary cassette decks--to make copies of recordings purchased in other formats for playback in car or portable decks or to assemble customized song sequences (perhaps mixing the work of various artists to create a collection that simply is not available commercially). Provided such home recordings are not sold, given away, or made from recordings owned by someone other than the taper, we see no harm. This is analogous to making Xerographic or photocopies of material in our magazine for personal use. It is a fair and reasonable use of products already paid for, yielding benefits that may not be obtainable by other means.

The record industry has claimed that it suffers grave losses from illegal taping of copyrighted material and that unfettered DAT machines will worsen the situation by virtue of their ability to make near-perfect copies. We feel that the Recording Industry Association of America's loss estimates are exaggerated (particularly in light of the amount of business done in prerecorded cassettes) and that the introduction of DAT recorders will have no adverse effect on record-company revenues. DAT decks are, by design, incapable of making direct, bit-level copies (clones) of prerecorded digital material (such as Compact Discs).

This would be true *even if* the decks were made capable of recording at the 44.1-kHz sampling rate used for CDs; that DAT machines will not be able to record at 44.1 kHz adds an extra layer of protection. The integrity of the record companies' master tapes is thus ensured. And though copies made through the analog inputs of DAT decks will, in general, suffer less degradation than those made on analog recorders, some loss is inevitable. Again, DAT decks are better than ordinary cassette decks, but they are not fundamentally different in function or application.

In fact, we expect that use of DAT machines for illegal copying will be virtually nil simply because they provide no economic incentive for that kind of activity. Would anyone too cheap to buy his own records spend fifteen hundred dollars on a DAT deck and ten dollars per cassette for the sake of copying recordings that he could buy for as little as five dollars and play on equipment selling for less than two hundred? Clearly no. Illegal taping, insofar as it is a problem, is confined largely to the realms of low-cost analog tape decks and commercial piracy--a situation that is unlikely to change. People who care about the kind of quality DAT can deliver will buy their own CDs and, when they become available, prerecorded digital cassettes. The proposed legislation would treat them like criminals before the fact.

I said earlier that the CBS copy-coding system mandated by the proposed legislation would harm the interests of both consumers and the record companies. For consumers, the harm is two-fold. One aspect is the loss of a superb new recording technology (people aren't going to buy these machines if they can't use them to record, so manufacturers won't bring them in). But the other will affect even those with no interest in home taping. The CBS system works by mutilating the recordings (records, tapes, and CDs) to which it is applied, and the damage is in some cases clearly audible. Everyone who buys recordings encoded with this system will suffer.

For record companies, the harm will not be as direct, but I think it will be every bit as real. DAT could open up a new avenue for the sale of recorded music. Historically, every successful new recording medium has enlarged the music market. One very pertinent example is the familiar analog cassette, which now accounts for most of the record industry's sales. Yet the cassette was not originally developed for music reproduction, and for a long time after audio equipment manufacturers had established its value for this purpose, record companies took little advantage. Home recording alone nurtured the cassette, creating the enormous installed base of machines that eventually became a huge new market for the record industry. Without home recording, the personal cassette player and high-performance car tape decks would never have come into being. DAT probably will never be as big a hit as the analog cassette has been (because it will always be more expensive), but it, too, has the potential to expand the market for recorded music. Copy-coding will foreclose that possibility.

Finally, I want to point out that there are better alternatives. Although we feel no legislation is necessary, we see nothing objectionable in outlawing the sale of machines that could be used for direct, bit-level dubbing of digital recordings or of dual-well "dubbing" DAT decks, should such recorders ever be developed. If it is felt that the record industry will incur some loss of revenue because of DAT, a small tax on blank DAT cassettes at retail could be used to compensate. (We would prefer that money collected from such a tax go to the National Endowment for the Arts, but the record companies might not consider that adequate.) Again, we do not believe this is necessary, but it is preferable to copy-coding. And if it is felt that no remedy less severe than copy-coding will serve, it would be better simply to ban the sale of DAT decks, to save commercial recordings from the sonic damage inflicted by the CBS copy-coding process. At the very least, record companies should be required to prominently label any copy-coded recordings as such, so that consumers can recognize and avoid them if they desire.

Respectfully submitted, 31 March 1987,

Michael Riggs
Editor
High Fidelity Magazine

CORRESPONDENCE

BOOK-OF-THE-MONTH CLUB, INC. 485 LEXINGTON AVENUE, NEW YORK, N.Y. 10017
(212) 867-4300

BOOK-OF-THE-MONTH RECORDS

March 31, 1987

The Honorable Dennis DeConcini
Chairman, Subcommittee on Patents, Copyright & Trademarks
Committee on the Judiciary
United States Senate
SH-328 Hart Senate Office Building
Washington, D.C. 20510

Dear Chairman:

On behalf of Book-of-the-Month Club, I am writing to express my concern about legislation that the U.S. Congress is now considering that could effectively cause the stillbirth of a new technology: that of the digital audio tape ("DAT") recorder. I am aware there will be a joint hearing by your subcommittee and Chairman Kastenmeier's subcommitte on April 2, 1987, on anti-DAT legislation and I would ask that this letter be made a part of the record of that hearing.

I am the director of the Record Division of Book-of-the-Month Club. Among other businesses, Book-of-the-Month Club is a national mail-order company that distributes prerecorded music by mail and through selected retail stores.

Book-of-the-Month Records is quite involved in digital music. Recently, for example, we digitally recorded seven three-record albums (released also as seven two-CD sets) and one four-record set (which was released as a four CD set).

Mr. Chairman, we feel that the DAT format presents us with an exciting new business opportunity. The eight titles that we have released - Songs of Liberty, Beethoven Piano Sonatas, Chopin Polonaises, Sondheim, Songs of New York, Bach Family Album, The Great Romantic Quartets and Swing Reunion (catalog attached) have been converted to LP, audio cassette, and CD formats; they were mastered digitally and could readily be made available to consumers in the DAT format with proper duplication and packaging. We make our music available in any medium the market demands, by quality, taste or convenience. We would hope to be able to bring these titles to the consumer before or coincidentally with the launch of the DAT recorder to the consumer. Therefore, we have three fundamental concerns with the legislation before your subcommittee.

First, the anti-taping technology removes frequencies from prerecorded music that are well in the audible range. Much of our music is chamber music or other classical music, including solo recitals; the degradation of 'notched' music will be noticeable to the listener. We believe that the anti-taping chip technology violates the integrity of the music. The whole point of digital sound is to capture the full range of audible sound, particularly the harmonics. The anti-taping chip 'notching' concept is the 20th century equivalent of legislating composers such as Beethoven to compose piano sonatas sans certain notes. Because the legislation before you would mandate inclusion of the anti-taping chip in the tape recorders, we urge you to explore the extraordinary consequence of the anti-DAT legislation.

Second, maintaining the overall high quality of the music that we release is of fundamental importance to Book-of-the-Month Records. Hence, we may well wish not to encode the records, CDs, or prerecorded digital audio tapes we distribute, but we are concerned that there may be pressure to adhere to an industry standard of distributing encoded recordings. And even if we adhere to such a standard, we will have no choice but to release CDs and analog audio cassettes of inferior quality that neither match our standards nor of the quality our customers expect.

Moreover, we think that widescale distribution of notched music will diminish consumer enthusiasm for prerecorded music, especially in the classical music field. In other words, we think that advocates of the anti-taping copy code technology are being remarkably shortsighted.

Third, I believe that the legislation you are considering will, if passed, inevitably result in DAT models that are playback only. Given this restriction in the technology together with the distortion and inferior quality of music caused by the anti-taping chip, I believe it will ensure a complete lack of consumer interest in this medium.

With the phonograph, the audio tape recorder and the compact disc, technology has worked hand-in-hand with software producers -- companies like mine -- to create new markets and exciting products. We benefit, the artists benefit, and so, too, does the American public. The DAT technology, we suspect, will be no different. We stronly urge you not to put a legislative roadblock in the path of the recording industry and the public.

Sincerely yours,

George Spitzer

cc: Senator Edward M. Kennedy
Senator Patrick J. Leahy
Senator Howell T. Heflin
Senator Orrin G. Hatch
Senator Alan K. Simpson
Senator Charles E. Grassley

GS:dat

GRP
Records
INCORPORATED

March 31, 1987

Senator Dennis DeConcini
United States Senate
SH-328 Hart Senate Office Bldg
Washington DC 20110

Dear Senator DeConcini,

I'm writing this letter to you to express my concern about legislation that would restrict Digital Audio Tape. I would very much appreciate your including this letter as part of the record of the April 2nd hearing.

By way of introduction, GRP Records is an independent record label focusing on the broad musical category known as jazz. We presently have over 50 titles in our catalogue including such artists as Dizzy Gillespie, Chick Corea, Dave Grusin, Lee Ritenour, Dave Valentin, The Glenn Miller Orchestra, The Duke Ellington Orchestra, Diane Schuur, the 1986 Grammy Award Winner, and many other new and rising stars. 1986 has seen our company grow to the leading independent jazz label in America. We specialize in high end, high quality digital recordings delivered to the consumer on the highest quality cassettes, LPs and compact discs.

I feel the committee reviewing the DAT (Digital Audio Tape) issue should look at the numerous questions and implications of the requirement to implant a decoding chip in DAT hardware. Some of the results may be very detrimental and not necessarily positive in the broad picture.

As a general overview, we, as an industry, are presently going through a technological transition. Simply, we are presently moving from an analog storage medium to a digital storage medium. For example, the LP (Black vinyl disc) which is an analog medium to compact discs, a digital medium. Needless to say, from a sound stand point this is a major step forward. The next technological step must be from the analog audio cassette to the digital audio cassette. The sound is far superior.

The concept of a copy guard system poses two basic problems. One, the pre-recorded software (ie, LP, cassette and CD) will have to be notched with the removal of potentially audible frequencies, thus taking away from the original sonic quality of the performance. Two, the hardware will not be an attractive item for the consumer since the main idea of a recording playback system is to record. Thus, it will not become successful in the United States.

In addition, small entrepreneurial companies such as GRP Records, who have an opportunity for market share over much larger companies, such as CBS, RCA, WEA, etc., when new technological concepts are introduced, will be hindered by the holding back of the technological advances regarding DAT.

These points are most far reaching and need much review. I urge you to take the time and not act without all the facts in this most important technological area. We as a nation must stay abreast of new advances in technology and not bury our heads in the sand.

Best,

Larry Rosen
Co-President

LR:kw
cc:
Senator Edward M. Kennedy
Senator Patrick J. Leahy
Senator Howell T. Heflin
Senator Orrin G. Hatch
Senator Alan K. Simpson
Senator Charles E. Grassley

MUSIC HALL
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3/31/87

Hon.Dennis DeConsini
United States Senate
SH-328 Hart Senate Office Bldng.
Washington DC 20510

Dear Sir,

I would appreciate it if this letter could be made part of the the April 2nd. hearing on the CBS Copy Code Technology.

The anti-DAT proposal before your committee has ramifications far wider than whether or not the public should be allowed to copy records or CDs.onto DAT.If this proposal were to pass a giant leap backward would have occured in the recording industry.

Since the days of Thomas Edison the Recording industry has been searching for ways to add more music onto the recording medium and generally speaking they have succeeded.Every decade has produced innovations such as better mastering,more efficient microphones,cutting equipment etc.The reason for this is that the more information you put on a record the more information you can retrieve.

But this proposal,born of the avarice of CBS,will send recording techniques into a backward spin.The geniuses

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at CBS have decided that the listening public are incapable of of missing certain frequences when they are removed from recorded music.If this is the case why does a transistor radio not sound as good as a $5000.00 Hi Fi system?The reason is,of course,that the radio only plays a narrow part of the audio spectrum.A good Hi Fi plays back a larger part of that spectrum
Music is made up of rhythm,pitch and timbre.Electronic removal of any part of the audio frequency must,by its very nature,affect the timbre and without a doubt the pitch and rhythm of the music.
As a distributor of high quality audio products I spend most of my time listening to music.My products sell well because they play back more of the audio spectrum than their competitors do.
If government must involve itself in the recording industry it should be only to ensure that the quality is improved not degraded.

Yours sincerely,

Roy Hall
R Hall.

cc.Hon.Edward M Kennedy
Hon.Patrick J Leahy
Hon.Howell T Heflin
Hon.Orrin G Hatch
Hon.Alan K Simpson
Hon.Charles E Grassley

RYKO

March 31, 1987

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The Honorable Robert W. Kastenmeier
United States House of Representatives
2328 Rayburn House Office Building
Washington, D.C. 20515

re: Courts, Civil Liberties & Administration of Justice Subcommittee

Dear Representative Kastenmeier:

Our company, Rykodisc, is an independent music label, presently unaffiliated with the RIAA. Although we share many concerns with them and their membership, on the issue of the proposed DAT legislation our views must diverge.

As proprietors of many and various copyrights, we recognize the value of their sanctity and will work vigorously to protect them. However, our understanding of the mechanics of the proposed anti-copying feature of DAT players suggests its utilization is predicated upon the inclination of software suppliers to eradicate an entire band from the frequency range of their masters. Our company regards it as anathema to compromise the quality of music masters (whether "marginally" audible or not) as a solution to any potential marketing problems, and would therefore refuse to do so with our own. This reasoning strikes us as the classic "cutting off your nose to spite your face."

We agree with the RIAA in that rampant "cloning" and outright piracy of prerecorded music is of real concern, and potentially harmful to music publishers, songwriters, and recording artists alike (resulting in fewer choices and higher prices for the consumer). But we don't feel that we're serving either ourselves or the consumer by supporting legislation which requires us to degrade our product.

We would be pleased if you might enter this letter into the record of the Hearing scheduled for April 2.

Sincerely,

Don Rose
President

DER:mc

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COMPACT disc DIGITAL AUDIO

Audio
CBS Magazines
A Division of CBS Inc
Gene Pitts, Editor
1515 Broadway, New York, New York 10036/(212) 719-6332

April 1, 1987

The Honorable Dennis DeConcini
United States Senate
SH-328 Hart Senate Office Bldg.
Washington, D.C. 20510

Dear Senator DeConcini:

I am quite concerned over a provision of the proposed omnibus trade bill (S. 635, the anti-DAT legislation) and over related legislation, S. 506 and H.R. 1384, which would prohibit distribution of Digital Audio Tape recorders (DAT recorders) without anti-copy ICs or chips therein.

Before I go into my views of the effects of this legislation, let me present you with some of my background. For the past 15 years, I have been associated with Audio magazine. The first 2½ years were as Assistant Editor, while the last 13+ have been as Editor. Audio is the oldest consumer hi-fi publication. It was started in 1947 and can trace its heritage back to the very beginning of hi-fi. It is generally considered to be one of the two or three best magazines in the world when it comes to thoroughness and depth of hi-fi equipment reviews. I have no personal interest in this matter, and am contacting you only because I feel the personal interests of the music-loving public are being threatened.

My essential concern is that the ordinary consumer be able to play music with maximum fidelity. The proposed anticopy chip format will do simply horrible things to music, putting a very deep notch into the music signal very close to the part of the hearing spectrum where the ear is most sensitive. As proposed, the record companies could put the notch into all forms of prerecorded music to trigger the anticopy chip. Such a notch would be quite audibly present on any standard LP, cassette, or Compact Disc player, so that to my mind the system is not compatible with current systems already on the market.

Some of the music industry folks have said that such a system is needed "to prevent consumers from getting copies as good as master tapes." I would like to point out that the Supreme Court has ruled that consumers do have the right to make not-for-profit copies of copyrighted materials. I feel there is no reasonable answer as to why consumers should not have access to the best possible recordings.

DeConcini, page 2, April 1, 1987

It also appears grossly unfair to single out DAT recorders in the omnibus trade bill when virtually all other forms of consumer electronics are being left alone. It appears to me that the bill, as written would wrest control of this exciting new technology away from its developers.

In the best interests of the music-loving American consumer. therefore, I ask that the Digital Audio Tape recorder be allowed to enter this country, unenclumbered by the anti-copy chip.

Sincerely,

Eugene Pitts III
Editor, Audio Magazine

CC: Sens. Kennedy, Leahy, Heflin, Hatch, Simpson, Grassley.

National Headquarters
Hitachi Sales Corporation of America

April 8, 1987

Honorable Dennis DeConcini
Chairman, Subcommittee on Patents,
  Copyrights and Trademarks
U.S. Senate Committee on the Judiciary
SH-327 Hart Senate Office Building
Washington, D.C. 20510

Honorable Robert W. Kastenmeier
Chairman, Subcommittee on Courts, Civil
  Liberties, and the Administration
  of Justice
U.S. House Committee on the Judiciary
2137 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman DeConcini and Chairman Kastenmeier:

I am writing to correct the record of the hearing conducted jointly by your Subcommittees on April 2, 1987, regarding the copyright issues presented by the new digital audio tape (DAT) technology.

Specifically, I am writing to correct a misimpression about Hitachi's DAT marketing plans that may have been conveyed by two of the witnesses at your hearing, Mr. Jason Berman, who testified on behalf of the Recording Industry Association of America and Mr. David Stebbings who testified on behalf of CBS Records. I ask that this letter appear in the record of your hearings immediately following the testimony of these two gentlemen.

In Mr. Berman's prepared statement and twice during his oral presentation, he asserted that Hitachi has exhibited DAT machines that record using the same sampling rate as the rate used in compact disc playback, so that the machines would be capable of digital-to-digital copying, or in Mr. Berman's words, "digital cloning." Mr. Stebbings made a similar statement in his prepared statement. Mr. Berman seemed to imply that Hitachi might market such DAT machines in the United States.

The facts are quite different. The DAT machines that Hitachi has just begun to market in Japan and that we hope to make available to consumers in the United States will not permit

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Mailing address P.O. Box 92232 • Los Angeles, California 90009

digital-to-digital copying. Hitachi's DAT machine will not "clone" compact discs, and they will not "clone" pre-recorded DAT tapes.

Like other actual and potential DAT manufacturers, Hitachi has chosen to adhere to a two-part technical standard that prevents such digital-to-digital copying:

- First, the sampling rates for CDs and DATs will be different. While music on CDs is digitally encoded and read using a sampling rate of 44.1 KHz, the DAT will not record at this sampling rate. The DAT will record and play at a rate of 48 KHz, and play (only) at a rate of 44.1 KHz. It will thus not be possible to make a direct digital-to-digital "clone" of a CD on a DAT machine.
- Second, a digital "flag-code" encoded in the source music by the producer of the music, will prevent digital-to-digital copying by a DAT machine, whether the digital source is a CD player or a pre-recorded DAT tape. When the DAT machine "reads" this flag-code, it simply stops copy recording.

These technical features of Hitachi's DAT machines will prevent the use of our machines to copy directly from digital sources such as CDs and pre-recorded digital tapes. When our machine is used to record through its analog inputs, it will make a very good recording, but our machine will not make a "digital clone." As noted above, my understanding is that other DAT manufacturers intend to adhere to these technical standards, as well. I hope this clarification is helpful.

You should know that Hitachi Sales Corp. of America, based in Los Angeles, California, is a member of the Home Recording Rights Coalition, and joins the Coalition in urging your Subcommittees and the Congress to reject proposals, such as those embodied in S.506 and H.R.1384, to disable DAT machines with mandatory copy code scanners.

Sincerely,

Yuzuru Kobayashi, President
Hitachi Sales Corporation
of America

8 April 1987

Robert Ludwig
26 Parkway East
Mt. Vernon, NY 10552

The Hon. Dennis DeConcini
United States Senate
SH-328 Hart Senate Office Bldg.
Washington, D.C. 20510

Rep. Robert W. Kastenmeier
2328 Rayburn House Office Bldg.
Washington, D.C. 20515

Dear Senator DeConcini and Rep. Robert W. Kastenmeier,

I am a mastering engineer involved with the final sound decisions on many record projects.

I was unofficially given a copy of the Barbara Streisand "Notch Test" CD. I compared it to the normal version and I heard differences between the two. I heard a "covered" sound on the voice and the harp passages seemed to lose some transparency. I auditioned the two CDs on small speakers (AR-18) and very expensive systems (Duntech speakers). The differences were noted on both systems.

I have sent to CBS in Milford CT. a digital tape of various samples that are to be put through the digital version of the notch filter for my evaluation. As of this morning I have not received this latest version so I am unable to evaluate it and thus withold any final judgement of the system.

Sincerely,

Robert Ludwig
Robert Ludwig

cc: Hon. Peter Rodino
Hon. John Dingell
Hon. Tom Foley
Hon. James Wright

RECEIVED
APR 10 1987
Sub on Courts

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